When Urban Policy Meets Regional Practice

EVIDENCE-BASED PRACTICE FROM THE PERSPECTIVE OF MULTI-DISCIPLINARY TEAMS WORKING IN RURAL AND REMOTE HEALTH SERVICE PROVISION

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Abstract

This thesis examines the currently under-researched issue of the uptake of evidence-based practice (EBP) among multi-disciplinary health teams in rural areas. Despite a worldwide government policy agenda promoting uptake of EBP, adoption remains low, particularly in rural environments. An extensive research base exists examining prevailing implementation interventions; however, the majority of these studies conceptualise the operationalisation of EBP as a linear and mechanistic process. This view diminishes the complexity of the research/practice relationship and negates the importance of exploring theoretical alternatives to the dominant positivism implicitly applied across much of the evidence-based movement.

In contrast, this study explicitly applies an interpretivist theoretical approach to increase understanding of the uptake of EBP by rural practitioners working in multi-disciplinary teams. The study involves a multi-site, multiple case study of health services in a large provincial city, a regional city, and a small remote town. Data collection comprised quantitative and qualitative measures and included a written survey of 207 practitioners and group/individual interviews with a total of 57 individual participants and five teams.

The key findings of the study were that uptake in rural environments is predominantly determined by complex social, disciplinary, contextual and organisational factors, rather than by knowledge of and attitudes about the concept of EBP. The urbocentric assumption that the capacity exists to translate evidence developed in metropolitan locations to diverse rural practice environments is flawed. Such an assumption lacks understanding of resourcing and geographic constraints as well as the dominant influence of rural community expectations on service delivery, particularly in more remote locations. The uni-disciplinary nature of EBP was found to be incompatible with the demands of multi-disciplinary practice, both in terms of the type of evidence available and in regard to differing perceptions of what constitutes knowledge and valid evidence. EBP was found to reinforce and compound discipline-specific marginalisation, particularly among the non-scientific disciplines. Despite promotion of EBP as a mechanism through which to legitimise and equalise treatment decision-making, the medical view on treatment was found to be a dominant factor in adoption of EBP, particularly in remote and conservative environments.

Statement of Authorship

Except where explicit reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part for a thesis by which I have qualified for or been awarded another degree or diploma. No other person's work has been relied upon or used without due acknowledgment in the main text and in the bibliography of the thesis.

Signed……

Date…….

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List of Abbreviations

ABS	Australian Bureau of Statistics
AHMAC	Australian Health Minister's Advisory Council
AIHW	Australian Institute of Health and Welfare
BHC	Base Health Care
CDHAC	Commonwealth Department of Health and Aged Care
DHS	Department of Human Services
DoI	Diffusion of Innovation
EBHC	Evidence-Based Health Care
EBM	Evidence-Based Medicine
EBN	Evidence-Based Nursing
EBP	Evidence-Based Practice
GP	General Practitioner
HHS	Hopwarrah Health Services
NH&MRC	National Health and Medical Research Council
NHS	National Health Service (UK)
NICS	National Institute for Clinical Studies (Australia)
NRHA	National Rural Health Alliance
QHS	Queens Health Service
RCT	Randomised Controlled Trials
WHO	World Health Organisation

1
Introduction

1.0 INTRODUCTION

This empirical study examines the uptake and applicability of evidence-based practice (EBP) by practitioners working in multi-disciplinary teams in Australian rural health service settings. Using in-depth case studies of three rural health services, the study seeks to address the current paucity of research into EBP in rural and remote service environments, particularly qualitative research examining the interplay between disciplinary practice frameworks, inter-disciplinary interactions, and locational contexts. Analysis of the literature has exposed the dominance of urban perspectives in the EBP research and policy arena. This dominance has been termed 'urbocentricity' in reference to the fact that policy, program planning, and funding is developed and controlled in urban areas, despite being applied in non-urban (rural) locations (Alston 2000; Cheers & Taylor 2000; Davies et al. 2000). This study considers the impact of this dominance and assesses whether urban policy planning and implementation processes for EBP have incorporated the needs of rural and remote communities adequately.

The study was funded by an Australian Research Council grant operationalised through a Strategic Partnership with Industry (Research and Training) initiative between the University of Ballarat and the Department of Human Services, Victoria (Grampians Region). Industry involvement in the project was driven by a policy priority to increase understanding around the motivators for adopting EBP in the rural and remote health services sector. It is intended that new knowledge emerging from this study will be used to inform government policy development on evidence-based healthcare strategy.

This introductory chapter has three sections. The first section outlines the research rationale and provides a review of policy imperatives around the evidence-based movement; the second section defines the concepts used throughout the document; and the final section outlines the thesis structure.

1.1 RESEARCH OUTLINE

1.1.1 Research Rationale

In the main, contemporary research on EBP has taken place within metropolitan locations, and has offered urbocentric solutions and insights. However, the transferability of these developments to rural locations is untested empirically. In addition, evidence development and studies on the implementation of this evidence have tended to be discipline-stream-specific; there has been very little research into either the development of multi-disciplinary evidence guidelines or the implementation of EBP from the perspective of individual practitioners working within multi-disciplinary teams. This research shortfall has provided the rationale for this study, which is to address these three specific key areas:

- the apparent discrepancy between the single discipline/treatment stream focus of evidence and guideline development and the notion of multiple practitioners working together, informed by best evidence, to achieve optimum outcomes in treatment provision;
- the assumption that policy developed within the urban context can, with minor procedural modifications, be transferred readily into the regional, rural, and/or remote context; and,
- the emerging gap between the rhetoric of policy imperatives for EBP and for multi-disciplinary practice and the reality of uptake of these concepts within rural and remote practice setting.

There is a growing body of research examining the policy/practice gap, the disparity between research development and its utilisation, and the influence of context, profession and organisation on EBP uptake. However, despite these developments, the following questions remain unaddressed:

- Is the evidence developed in metropolitan locations transferable to the rural context?
- Are rural practitioners able to effectively adopt the same techniques in the use of evidence as their metropolitan counterparts?
- How does adoption and applicability of EBP differ in diverse rural locations?
- What are the issues at intra- and inter-disciplinary levels for practitioners wishing to apply EBP?

- Is evidence-based practice, and the evidence types that characterise it, equally applicable to all disciplines within the health service sector?

- What are the social, cultural, political, professional, and inter- and intra-disciplinary issues that influence the uptake of multi-disciplinary EBP in rural health care settings?

Developing insights into these questions is important in informing health policy planning, particularly when considering contemporary agendas in the health sector. These agendas reflect a global shift toward achieving quality in healthcare delivery (and an associated push for the application of EBP) and an increase in the use of multi-disciplinary approaches to practice. Given these emphases, research examining the rural perspective on these issues is a critical part of ensuring metropolitan/rural differentials are identified and responded to in health policy frameworks.

1.1.2 Contextual Framework

In recent decades, the health service system has moved toward the adoption of evidence-based approaches to professional practice. This shift emerged concurrently with the global trend toward endorsing outcome-based services to achieve predetermined standards of quality and accountability (Culyer 1996; National Health Service [NHS] 1998). The imperative to achieve improved individual and population health is in response to a number of innovations and challenges within and outside the health services arena. These include:

- development of new and complex health technologies (Dawes et al.1999; Muir Gray 1997; Stevens et al. 2001) requiring dissemination to, and application in, practice;

- increased levels of population knowledge and expectations, resulting from increased availability of information around new techniques and treatment strategies (Holmes-Rovner et al. 2001; Shorten & Wallace 1997);

- increased pressure on health dollars, necessitating the development of procedures and practices that minimise costs and maximise successful health outcomes (Commonwealth Department of Health & Aged Care [CDHAC] 1998; NHS 1998; World Health Organisation [WHO] 1999);

- increased identification, nationally and internationally, of system shortfalls in countering human error (Australian Health Ministers Advisory Council [AHMAC] 1996; Medical Services Advisory Committee 1998; NHS Executive 1998; WHO 1999); and

- recognition of the need to develop a systemic approach to health service delivery involving increased disciplinary interaction and inter-organisational health care provision (AHMAC 1996; CDHAC 1999a, 1999b, 1999c).

Australian and international government policy advocates that treatment is best provided by a variety of disciplines using proven evidence bases to enhance quality and best practice (CDHAC 1998, 1999a, 1999b, 1999c, 1999d, 2000; National Expert Advisory Group on Safety and Quality in Australian Healthcare 1998; Wooldridge 1999; WHO 1996, 1999). In the same way that the application of evidence is valued, at the policy level, for its perceived capacity to minimise the use of unproven/discredited treatments and overcome inconsistencies and inefficiencies in health service delivery, multi-disciplinary treatment approaches are also being promoted. A review of the international literature reveals the importance of multi-disciplinary work in contemporary health service provision (Abramson & Mizrahi 1996; Abramson & Rosenthal 1995; Badger & Ackerson 1997; Feder, Cryer, & Donovan, 2001; Onyett & Ford 1996; Patel et al. 2000; Patronis Jones 1997; Pugh et al. 1999; Schader et al. 1999; Slade, Rosen, & Shankar 1995; Stewart, Marley, & Horowitz, 2000). This reflects an assessment that the needs of individuals, who often have multiple and complex requirements, are best met by input from a team of practitioners (Madge & Khair 2000).

Despite support for the adoption of multi-disciplinary evidence-based approaches at the government and policy-making level, its attainment at the practice level remains elusive. Using evidence to inform practice is complex, even when adopted by a single practitioner. It requires availability of current and validated research on specified health problems, and a corresponding capacity to access and apply research evidence in a practice environment. At a systems level, this presupposes the establishment of classification measures relating to evidence types (NH&MRC 1998); the creation of standardised mechanisms to access, review, evaluate, and disseminate validated health treatment data (Cochrane Collaboration 2001); and an increased commitment to fund evidence-based research into the efficacy of health treatments (NHS 1999; CDHAC 1999c). At a practice level, it translates into a need to review existing approaches to service management and delivery, as well as challenging practitioner perceptions of the scope and authority of their role in treatment decisions.

While discipline-specific implementation issues are being researched (Ciliska & DiCenso 1999; Dunston & Sim 2000; Haines & Donald 2002; Hendriks et al. 2000; Pollock et al. 2000; Silagy &

Haines 1998), limited research, particularly empirical research, has been undertaken on the use of evidence by multi-disciplinary teams. The complexity of issues surrounding the value of EBP, its frequency of application, its perceived benefits and limitations, and the form and type of evidence bases used increase exponentially when applied across disciplines. Disciplinary differentials resulting from professional philosophy, discipline training, professional development, professional socialisation (and associated worldviews) (Leathard 1994, Lenkman & Gribbins 1994, Norris 2001), as well as the rural context, play a defining role in determining levels of uptake.

1.1.3 Research Summary

This study examines EBP across the domains of rurality and multi-disciplinary teamwork in order to address the current paucity of knowledge in these areas. The study examines EBP from the perspectives of the multi-disciplinary team, individual members of that team, and service management. As influences vary between regional, rural, and remote locations, feedback is gathered from services of varying size and degree of rurality.

1.2 DEFINITIONS

1.2.1 Defining the Evidence-Based Movement

The three defining concepts to emerge since the introduction of the evidence-based movement have been:

- evidence-based medicine (EBM)
- evidence-based practice (EBP)
- evidence-based health care (EBHC)

Each is a distinct but related component of the evidence-based movement. EBM and EBP are practice-focused and essentially target the use of ‘current best evidence in decision-making when working with individual clients’ (Sackett et al. 1996, p. 71). EBM is defined as ‘the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients’ (Sackett et al., p. 72), while (the more generic term) EBP is defined by McDonald (2001) as a model that incorporates three levels of decision-making at the population, organisational, and individual patient level. This systemic view is mirrored by Stevens et al. (2001, p. 1) who argue that ‘the term “evidence-based healthcare” extends the scope of those making decisions not just about patients but about populations…it also widens the scope of the subject matter to include not only

the evidence for the effectiveness of elements of healthcare, but…also the costs and benefits of all activities within the healthcare system'.

EBP uses non-discipline-specific language and promotes the use of evidence at the point of clinical, management, or practice contact (Dawes et al. 1999, p. 2). This focus means it can be applied readily across disciplines, which is a fundamental requirement in a study focusing on disciplinary and cross-disciplinary perspectives.

Evidence-based practice (EBP)

For the purposes of this study, evidence-based practice is defined as 'the use of best research evidence at the clinical, management or practice level to inform client-based clinical, management or practice decision-making'. Unless specified otherwise, evidence-based practice, or EBP, is used throughout this research study to refer to the use of evidence in decision-making relating to individual clients. The term evidence-based medicine, or EBM, has been used when employed within the supporting literature.

Levels of evidence

The National Health and Medical Research Council (NH&MRC) has developed the most definitive framework available to the Australian health system to rate levels of evidence.

Level 1:	Evidence based on the systematic review of relevant Randomised Control Trials (RCTs)
Level 2:	Evidence based on at least one properly designated RCT
Level 3-1:	Evidence based on well-designed pseudo-RCTs
Level 3-2:	Evidence based on comparative studies with concurrent controls and allocation. Not randomised (cohort studies), case control studies, or interrupted time series with a control group.
Level 3-3:	Evidence based on comparative studies with historical control, two or more single arm studies, or interrupted time series without a parallel control group.
Level 4:	Evidence from case studies, either post-test, or pre- and post-test.

An analysis of these ratings highlights the reliance within the evidence-based movement on scientifically based standards of evidence. Using the NH&MRC standard, the most valued evidence is gained through the systematic review of relevant RCTs. As adherence to rigid scientific

frameworks decreases, so does the rating given to that research evidence within the evidence hierarchy, thus revealing the enduring dominance of the scientific/positivist tradition within the health service sector. The placement of case study based evidence at the bottom of the hierarchy (receiving 'least-valued' status), and the absence of other types of qualitative evidence types indicates the extent to which evidence remains focused on clinical and scientific frameworks.

The cornerstone for the evidence-based movement continues to be clinical scientific evidence, and this creates a problem—at the most fundamental level—for practictioners of less-scientifically based disciplines who may be unable to identify the relevance of this paradigm as it applies to their daily work practices. While the establishment of the Campbell Collaboration (Petrosino et al. 2000) represents an acknowledgment of the importance of alternative types of evidence—involving, as it does, a structured process to build up systematic reviews of effective interventions in education, social work, and criminal justice—this collaboration is still at an embryonic stage. The traditional view of using evidence informed by science, as classified by the NH&MRC hierarchy, remains the dominant approach in the health service sector, and this is the framework used within this study when referring to evidence hierarchies.

1.2.2 Multi-Disciplinary Teams

A review of the relevant literature reveals a number of interchangeable terms relating to team-based research in health studies. These are:

- multi-disciplinary team
- cross-disciplinary team
- inter-disciplinary team
- trans-disciplinary team
- inter-professional team
- intra-professional team

As all teams involved in this study were defined as 'multi-disciplinary' by team members and unit and management level staff, this is the definition used throughout the study.

Multi-disciplinary

Multi-disciplinary refers to a group of practitioners from different disciplines who work together to meet an individual's health needs. Generally, the team has a medical clinical leader who gathers information from the diverse disciplines for use when making treatment decisions. Practitioners retain high levels of practice autonomy when gathering information using their discipline's

treatment framework. Loyalty within the multi-disciplinary team can be tenuous because the individuals representing their discipline on the team can change; however, the important factor is representation by discipline rather than representation by specific individuals (Garner & Orelove 1994; Gill & Ling 1995).

1.2.3 Rurality

The available literature on rurality reveals inconsistent definitions of 'rurality' as used in the Australian context (Davies et al. 2002; Humphreys 1998). A number of rural classification indexes have been developed since the 1980s[1], but these have been criticised for not accommodating geographical and sociological factors, and for classifying areas without consideration to the diversity of rural communities or environmental, seasonal, and community factors (Humphreys 1998).

In choosing definitions for use within this research, which involves case studies across degrees of rurality, it was decided to use a system that applied either purely geographical- and/or population-based approaches and then allow this classification to provide the broad framework for identifying levels of rural/remoteness. After considering available classification options, and in the absence of an effective index of rurality, the Accessibility/Remoteness Index of Australia (ARIA) was chosen for use. This choice acknowledged that zoning based on population *and* on levels of accessibility to goods and services needs to be considered if the term 'rurality' is to be effectively defined.

ARIA measures remoteness in terms of access to service centres and group locations (CDHAC 1999d). Service centres are grouped according to population numbers:

A	Highly Accessible	>250,000
B	Accessible	48,000–249,999
C	Moderately Accessible	18,000–47,999
D	Remote	5,000–17, 999
E	Very Remote	<5000

[1] Alternative Rurality Indexes that have been developed in Australia in recent times include:
- Faulkner and French's 1983 Index of Remoteness which involved the plotting of contours of remoteness from a developed grid map (Commonwealth Department of Health and Aged Care 1999d).
- Rural, Remote and Metropolitan Areas (RRMA) 1994 classification which used calculated an index of remoteness using Statistical Local Areas and distances between nearest centres (Department of Human Services and Health, 1994).
- Griffith Service Access Frame (GSAF) uses Census Districts grouped in zones of relative access to a particular service and measures distance in terms of time and cost (Commonwealth Department of Health and Aged Care 1999d).

To reveal the ways in which population size and service access affect EBP, data were collected from three locations across regional Victoria: one Accessible (B) regional location, one Moderately Accessible (C) rural location, and one Remote (D) location according to the ARIA category groupings.

1.3 STRUCTURE OF THE THESIS

This thesis comprises eight chapters, each with a specific focus, and is structured in the following way:

Chapter 1 provides an introduction to the context and focus of the thesis—the evidence-based paradigm—and supplies definitions for terminology and concepts used throughout.

Chapter 2 critically reviews the available literature on rurality, inter- and intra-disciplinary practice bases (examined as multi-disciplinary practice), and EBP.

Chapter 3 presents the theoretical framework for the study, and identifies and evaluates the implicit theories underpinning the implementation of EBP.

Chapter 4 outlines the methodology behind the research aim and questions, the study design, sample and procedures, as well as data analysis processes and relevant ethical considerations. This chapter also provides important background on the three study sites.

Chapter 5**,** the first of three results chapters, focuses on the case study of Queens Health Service (QHS), situated in an accessible regional location (ARIA category grouping ‘A’). This chapter depicts the strong influence exerted by professional socialisation, discipline frameworks, work unit leadership, and organisational philosophy on the uptake of EBP.

Chapter 6**,** the second results chapter, presents the findings on Base Health Care (BHC), which services a moderately accessible regional location (ARIA category grouping ‘B’). This chapter examines an organisational initiative to introduce EBP and identifies how, despite improvements in health outcomes, issues of professional socialisation, discipline culture, time constraints, and rurality limit individual practitioner and team development skills and knowledge in EBP.

Chapter 7 is the third and final results chapter. It presents the findings of the third case study, Hopwarrah Health Services (HHS), which services a remote regional location (ARIA category grouping ‘D’). This chapter discusses the extent to which remoteness and the associated dominance

of community control of the health service shape all aspects of service delivery and development, including the uptake of EBP.

Chapter 8, the final chapter, provides a consolidation of findings across the three case study sites, and draws conclusions in relation to the literature, theoretical framework, and research questions. It also makes recommendations arising from the research.

2
Literature Review

EXAMINING THE INTERSECTION OF RURALITY, MULTI-DISCIPLINARY PRACTICE AND THE EVIDENCE-BASED MOVEMENT

2.0 INTRODUCTION

This chapter examines the literature relevant to this study by focusing on three aspects: rurality, EBP and the individual health discipline, and multi-disciplinary practice. The final section consolidates the findings of the review and presents a meta-analysis in diagrammatic form.

The literature review involved electronic searches of the following national and international databases 1990–2004: Academic Search Premier; Australian and New Zealand Reference Centre; CINAHL; EBSCO Host Online Citations; Econ Lit; Health Business Fulltext Elite; Health Source: Nursing/Academic Edition; MasterFILE Premier; Medline (FirstSearch); Pre-CINAHL; ProQuest Health & Medical; Pubmed; the Psychology & Behavioural Science Collection; and, the Sociological Collection. Background data were also taken from text sources on EBP, and online EBP support databases such as the Campbell Collaboration, the Cochrane Library, the Australian National Institute for Clinical Studies (NICS) and the NHS Centre for Reviews and Dissemination.

To establish a research base to frame the study, the review focused on the individual pools of:

- Rurality (generally and specific to EBP)
- Health Disciplines and EBP
- Multi-disciplinary Practice Issues (generally and specific to EBP)

2.1 RURALITY

The rural context is pivotal to this study; it provides the contextual framework within which EBP and multi-disciplinary practice are examined. The following subsection clarifies this context by outlining the key health issues facing rural communities and the status of EBP within these communities.

2.1.1 Rural Health and Diversity

Rural communities worldwide have a poorer health status than metropolitan communities (Bourke 2001; Dixon & Welch 2000; Pong 2000; Ryan-Nicholls 2004; Welch 2000) with rates of mortality and morbidity consistently higher in rural regions in Australia (Australian Institute of Health and Welfare [AIHW] 1998). While government and non-government sector health policy and planning initiatives increasingly acknowledge the serious health issues facing rural areas (Good Health to Rural Communities: 10 Point Plan 2004; NRHA 1999; Worley 2004), the health status of rural and remote Australia remains less than optimum (Humphreys 1999; Humphreys et al. 2002). Burden of disease studies highlight the following rural-metropolitan health differentials:

- Rates of suicide and road vehicle accidents are higher in rural locations (AIHW 1998; NRHA 1999).
- Death rates due to injury are significantly higher in rural locations (53 per 100,000 in cities, 77.5 per 100,000 in rural locations) (Dixon & Welch 2000).
- Rural populations have poorer dental health than metropolitan populations (AIHW 1998).
- Men's health, particularly mental health, is a significant concern in rural locations, and manifests in higher rates of suicide and risk-taking behaviours (NRHA 1999).
- Rates of asthma, heart disease, and diabetes are significantly higher in rural locations, while cancer rates are comparable to metropolitan locations (AIHW 1998; DHS 1999; NRHA 1999).

The common causal factors for these differences include:

- The economic downturn in rural Australia: Studies by the ABS (1999) and Turrel et al. (1999) were unambiguous in linking low socioeconomic status and poor health. The 1998 and 2000 ABS analyses of socioeconomic indicators across urban, rural, and remote Australia identified higher levels of economic disadvantage in rural over urban locales.
- The nature of the rural environment: Rural employment opportunity is predominantly in sectors with greater potential for workplace accidents (such as agriculture and mining). In addition, individuals often travel to this employment on substandard roads, thus increasing the possibility of road trauma (Dixon & Welch 2000).

- The increased prevalence of risk-taking behaviours amongst young rural males: Isolation from alternative recreation options, combined with traditional stereotypes of aggressive, drinking, daring rural youth, advance this trend (Dixon & Welch 2000; NRHA 1999; Welch 2000).

- The decreased access to goods and services due to geographic isolation: This limits access to health services, information on health and health promotion, and affordable health care (Bourke 2001). Consequently, many rural consumers view usage of health services as a reactive rather than a preventative process (Dixon & Welch 2000).

- The culture of rural Australia: Stereotypical images depict rural Australians as independent, capable, and competent, with little need to access health services unless the situation is life-threatening[1] (Dixon & Welch 2000; NRHA 1999; Weller 1999).

- The social structure of rural communities: The lack of privacy emerging from traditionally strong familial, inter-familial, and community social support structures can limit access to health services. Individuals within rural communities may choose to ignore a health concern rather than risk, whilst seeking treatment, being 'exposed' by health staff or other attending patients with whom they may have a relationship or acquaintance. Geographic isolation and the associated inability to pursue alternative health service options also contribute to poor rural health status (Stevens 1998).

- The higher number of Indigenous Australians in rural and remote Australia: The poor health status of indigenous Australian across all health indicators is well documented (Australian Indigenous Health InfoNet 2001; AIHW 2002; Dawson 2004; Dixon & Welsh 2000) and will impact on the overall health status of any community with large indigenous populations[2].

[1] This stereotype was reinforced recently when the researcher worked in a program aiming to increase health services to rural and remote Victoria (CDHAC: Regional Health Services Program 2000–2003). Throughout an extensive community consultation, the recurrent theme was that rural people preferred to cope with health issues on their own and not burden the health system through unnecessary access. What rated as serious enough to be defined as 'necessary' remained unclear throughout the consultative process.

[2] The AIHW (1998) examined the link between the poor health status of indigenous Australians, indigenous population levels and poor general health status in rural and remote areas. They found that high numbers of indigenous Australians in remote locations did influence assessments of overall community heath status but that the indigenous population in regional and metropolitan areas was not great enough to impact on overall assessments of the health status of these communities. Given these findings, while indigenous health is potentially a determinant of health status in communities, the extent of any impact would need to be based on the population ratios within the community under consideration.

These insights are important in informing responses to addressing the rural/metropolitan health differential. An equally important issue is that of 'rural diversity' and its impact on health policy capacity to respond to rural health needs uniformly.

Rural communities do not just differ from their urban counterparts; they also differ from each other in a variety of fundamental ways, including demographics, degrees of remoteness, the economic base maintaining an area, cultural beliefs and historical perspectives of communities, and/or types of industry that are the mainstay of an area (Humphreys & Rolley 1991; Ryan-Nicholls 2004; Welch 2000). An understanding of this diversity, and an acknowledgment that 'rurality' is not a static concept, is essential to any study into rural health. The decision to undertake this study across varying degrees of rurality was made to accommodate the dynamic differences that characterise rural communities—differences too often dealt with through application of either regionally developed research that does not account for diversity or metropolitan-based frameworks.

The federal government has recognised this issue in rural policy statements where they aim to 'encourage research about local health issues…improving rural health based on research undertaken in rural, regional and remote Australia' (NRHA 1999). However, the extent to which this has occurred remains limited.

2.1.2 EBP in Rural Australia

Discussion of the role of EBP in rural health service provision is beginning to emerge (Weller 1999), as is debate around its potential benefits. Recent work by Baker et al. (2004) sought to identify specific rural research needs through a workshop involving 75 participants. Twelve themes emerged from this session, with EBP identified as a priority (by 39% of participants), specifically in relation to processes for implementation of best practice models and the provision of practitioner support to use evidence in practice.

The value of EBP to rural practice is a topic of debate. Some researchers have promoted EBP as a way of redressing rural health disadvantage through improved consistency in treatment and best use of scarce resources (by minimising duplication of treatment and the use of inappropriate treatment options) (McCarthy & Hegney 1998; Turner 1996; Weller 1999). Others have recognised problems in applying EBP with its focus on single-issue health problems to complex rural environments (McDonald & Smith 2001). As rural practitioners tend to work as generalists, available research evidence and guidelines, with their single treatment and discipline stream focus, are not as directly applicable to rural environments (McDonald 2001; Taylor et al. 2002).

Despite these developments in considering the potential benefits or barriers to EBP in rural practice, empirical evidence on EBP in the rural context remains scarce.

A review of contemporary work on rurality highlights research paucity at two levels. Firstly, research available to inform practice continues to be undertaken in metropolitan environments, despite the recognised lack of transferability of this work to the rural context (Brown 2002; Fraser et al. 2002; Humphries et al. 2002; Morris 1999; Weller & Veale 1999). Secondly, research specific to the utilisation of EBP in rural Australia is virtually non-existent (Parsons et al. 2003; Taylor, Campbell & Campbell 2003), with available research confirming the impact of rural diversity and the metropolitan/rural environmental differential on uptake and applicability (Murphy 2003).

These findings reinforce the need for this empirical study.

2.2 EBP AND HEALTH DISCIPLINES

2.2.1 Search Overview

The following databases were sourced for this stream of inquiry: Academic Search Premier (1990–2004 inclusive); CINAHL (1990–2004 inclusive); EBSCO Host Online Citation (open search); Health Business Fulltext Elite (1996–2004 inclusive); Health Source: Nursing/Academic Edition (1990–2004 inclusive); MasterFILE Premier (1990–2004 inclusive); Medline (1990–2004 inclusive) and Proquest (1990–2004 inclusive). The key words ‘evidence-based practice’ and ‘evidence-based healthcare’ were used to commence the data search. These initial key words were too broad, with 8379 returns across databases, many of these relating to clinical practice and, therefore, not pertinent to the study parameters. The search was narrowed to consider EBP within the context of individual health disciplines. A large resource pool was found using this uni-dimensional approach, which focussed on the perceptions of single (and often distinct and diverse) health disciplines and their assessments of the advantages, disadvantages and barriers of EBP. This approach is problematic as it compartmentalises findings and limits insights around the critical implementation issues for EBP at the multi-disciplinary level. Acknowledging this limitation, this line of inquiry provided valuable insights on how the different individual disciplines view EBP. The following sections will examine the issues relating to EBP for medicine, allied health and social work. While social work is generally defined as an allied health professional, for the purpose of the literature review, this discipline has been examined separately. This was done because, unlike other allied health areas, across which there was a degree of consistency in the types of issues raised, the

literature on social work highlighted a number of unique concerns that it was important to explore separately.

2.2.2 EBP and Medicine

The literature review identified that the discipline of medicine has a high level of conversance with EBP, which results from its historical and practice links to science. The biomedical model, intrinsic to initial professional medical training, is maintained through Continuing Medical Education and daily practice requirements. EBP has branched from EBM, which is taught explicitly and implicitly within the discipline's formal training programs (Evidence-based Medicine Working Group 1992; Sackett et al. 2000; Upshur 2003)—albeit with varying levels of success (Guyatt et al. 2000; Young, Glasziou & Ward 2002). Moreover, attitudinal studies on EBP consistently show that medical practitioners generally view EBP positively, as it is a means to improve patient health outcomes (Dowswell, Harrison & Wright 2001; McColl et al. 1998b; Mayer & Piterman 1999; Taylor et al. 2001; Tracy, Dantas & Upshur 2003).

However, these same studies also found that positive attitudes toward EBP did not equate to high levels of adoption of the paradigm. Evidence adoption by medicine was found generally, to relate to one of the two following factors: *service delivery and professional practice* issues or *practice management*.

Service delivery and professional practice issues

The key themes emerging from issues surrounding service delivery and professional practice relate to threats to professional autonomy, clinical utility of evidence, the demands of the practice context, and the role of clinical wisdom in decision-making.

A central theme in the literature is the resistance to EBP stemming from a perceived potential for infringement on autonomy. A seminal explanation for this resistance is offered by Friedson (1970), who identifies the differentiating factor between 'occupation' and 'profession' to be the degree of autonomy held over work practices. A threat to autonomy is often perceived, therefore, as a threat to professionalism. The studies by Adams (2001), Armstrong (2002), Cash (2001), Dowswell et al. (2001), Ferlie and Shortell (2001), McDonald and Daly (2000), Morreim (2002), Richman and Lancaster (2000), Sullivan (2000), and Tracy, Dantas and Upshur (2003) all identify that these perceptions of potential loss of clinical autonomy impact on EBP uptake by the medical profession. Ritzer and Walczak's 1988 work, while not specific to EBP, articulates concerns by the medical profession that the loss of autonomy and power associated with increased managerialism leads to a

de-professionalisation of medicine. The control ceded to government, managers, and service users through the accountability requirements (Britten 2001; Rodwin 2001) and costs rationing (Saarni & Gylling 2004) associated with EBP have been identified as resulting in a diminution of clinical discretion. Additionally, there was a strong view that the 'art of medicine' (McAllister et al. 1999; Mayer & Piterman 1999; Tracy, Dantas & Upshur 2003) could be lost to the prescription of EBP.

The paucity of available research measuring the outcomes of evidence-based interventions over alternative mechanisms for clinical decision-making (Jacobson et al. 1997; Mayer & Piterman 1999; Sullivan & MacNaughton 1996; Weller & Veale 1999) strengthens this resistance, particularly when the credibility of available evidence is in question. General practitioners, in particular, identified that their credibility and the level of trust given to their decision-making by colleagues and patients required them to have a corresponding trust in the credibility of available evidence (Tracy, Dantas & Upshur 2003). This trust was compromised when practitioners were unsure of their search skills and subsequently lacked confidence that application was correct or complete. The potential for pharmaceutical industry bias (Bekelman, Li & Gross 2003; Tracy, Dantas & Upshur 2003; Upshur 2003) also compromised user trust in available evidence. Concerns around evidence credibility means that practitioners prefer to use clinical experience for decision-making, with the knowledge and aptitude gained in practice continuing to be a major determinant of clinical decisions.

The ability to transfer research into practice effectively while meeting the needs of patients and/or service locations has been shown to influence EBP uptake (Thompson 1999). This was particularly true in general practice environments (Clarke & Procter 1999; Closs & Cheater 1999; Dunbar 2001; Ferlie, Wood & Fitzgerald 1999; Greenhalgh 1999; Guyatt et al. 2000; Morris 1999; Scott, Heyworth & Fairweather 2000; Taylor et al. 2001; Weller & Veale 1999).

The unique social and cultural characteristics of patients and of practice localities, the doctor/client relationship, the discussion during consultations (and the subsequent development of a client history) all add depth and diversity to the presenting health concern of the individual client (Putnam et al. 2002). This is also true of patients' wishes in relation to treatment options (Bastian 2000; Daly, Hughes & O'pt Hoog 2000; Fitzgerald & Phillipov 2000; Straus & McAllister 2000). However, although these factors have a marked impact on the subsequent interpretation of what was identified during a consultation, they are not incorporated into research evidence (Ferlie, Wood & Fitzgerald 1999; Freeman & Sweeney 2001a, 20001b; Weller & Veale 1999).

A recurrent theme in the literature, as identified by Anderson (1999, p. 466), is that 'while EBP does increase knowledge of gains in relation to "what works" it needs to increase knowledge about 'what works in the real world'. Although RCTs are acknowledged as identifying efficacious treatments, their capacity to promote what Bower (2003, p. 329) refers to as 'clinical utility' continues to be questioned. This is particularly so in regard to rural practice (Dunbar 2001) and primary care; areas for which evidence availability remains low (Bryan-Brown & Dracup 2004; Charlton 1997; McColl et al. 1998a; Miles et al. 1999; Morris 1999; Slowther, Ford & Schofield 2004; Tanenbaum 1993; Tonelli 2001).

Consequently, while members of the medical profession have higher levels of proficiency with scientific data than a number of other health professionals (such as social work), EBP is seen, by this discipline, as being only partially relevant to service delivery. It is recognised that effective medical practice requires a mixture of clinical experience and best available external evidence (Sackett et al. 1996). New models incorporating clinical expertise have been developed (Haynes, Devereaux & Guyatt 2002) in response to the service delivery context in the 'real world', where clinicians retain substantial autonomy, hold significant clinical expertise and resist external interventions (Ferlie, Wood & Fitzgerald 1999).

Practice management issues

The financial and operational aspects associated with EBP implementation also affect its uptake by the medical profession, with perceived costs diverting attention and capacity from patient care. This is of particular relevance in rural and remote communities with small resource bases and limited ability for resource sharing and access to technical support.

The two central costs relate to increasing practitioner knowledge of EBP and improving practitioner skill in accessing evidence. Despite the medical profession having a high level of cognisance of EBP, its lack of knowledge and skills around EBP are problematic (McAllister et al. 1999; McColl et al. 1998b; Rosenberg & Donald 1995; Straus & McAllister 2000). Studies have found particular deficits in critical appraisal of evidence and in evidence application (Doust & Silagy 2000); a lack of awareness of the databases available for accessing evidence (McColl et al. 1998b; Young & Ward 1999); and a lack of knowledge of the medical terminology relevant to EBP (Khan et al. 2001; Woodcock, Greenley & Barton 2002; Young, Glasziou & Ward 2002).

Provision of training to overcome these knowledge deficits represents a significant practice management and infrastructure cost, particularly given the recognised time demands (McColl et al.

1998b; Scott, Heyworth & Fairweather 2000) and workload issues associated with service provision, especially in rural areas (Taylor et al. 2002; Tracy, Dantas & Upshur 2003).

The introduction of EBP also requires a commitment of resources to training in online information retrieval, particularly in an environment where '400,000 articles are added to the biomedical literature each year' (Davis et al. 2004, p. S68). While studies have shown that uptake will improve with the provision of training (Ghali et al. 1999; Kronick et al. 2003), the costs associated with the infrastructure development required can be a deterrent (Power & Aloizos 2000; Wilson, Glanville & Watt 2001). In Australia, a number of incentives have been introduced to support this process. The establishment of the Divisional Movement (for General Practice) and the Practice Incentive Payment (PIP) program aims to provide payment and technical support for the development of information management/information technology processes within practices. These initiatives aim to promote adoption of computer-accessed evidence-based decision-making (CDHAC 2000); however, the extent to which they have been successful beyond being used to complete prescriptions and access client records during consultations is yet to be assessed.

Considering these factors, the key enablers for EBP uptake among medical practitioners compared to practitioners in other health disciplines can, thus, be identified as:

- a history of using scientific evidence as a basis for decision-making;
- higher levels of conversance with the scientific paradigm;
- higher levels of exposure to the concept of EBM, both in initial training and through ongoing professional development;
- higher levels of funding allocated to research and development for evidence-based practice research and dissemination of results (Atheron 2000);
- the availability of extensive text and online resources to support and inform EBP in this discipline, with research by Wilson, Glanville and Watt (2001) showing that medical practitioners, specifically GPs, continue to have greater levels of access to resources for EBP; and,
- the fact that the evidence-based movement originated in this discipline, so while individual results may not be accepted and utilised in every instance, there is a higher level of ownership of the concept in this discipline.

2.2.3 EBP and Nursing

The profession of nursing has actively sought a defining role in shaping the movement to use EBP in decision-making. This is evidenced by the establishment of centres for evidence-based nursing (EBN) such as the Joanna Briggs Institute (Australia, Hong Kong & New Zealand) and the UK and European centres for EBN. An analysis of documentation on EBP and nursing highlights the importance that is given to the potential EBP has to strengthen the movement to professionalise nursing. McCarthy and Hegney (1998, p. 97) encapsulate this when they identify EBP as 'a mechanism through which to strengthen the voice of nursing in the collaborative healthcare environment because it justifies nursing actions'.

While the professional philosophy of nursing espouses the importance of the EBP paradigm (Romyn et al. 2003), the application of research findings depends on practitioner ability to access and understand research; the opportunities provided to incorporate such research into practice; and the extent to which the research can be implemented in practice (Pollock et al. 2000). These issues can be explored in an examination of the following three central themes: the service delivery context; applicability of, and skills in, EBP; and workplace issues.

The service delivery context

Nursing practice does not focus solely on diagnosis and medical treatment. It involves work that is diverse and often 'hidden', in that it is not treatment-specific or intrinsically biomedical in nature (Hunter 1999). Practice diversity requires nurses, particularly those working in community settings, to place greater emphasis on the context in which they work and to modify their practice to accommodate that context. This is particularly pertinent in rural communities operating with limited access to health services and health service resources (McMurray 1998). Nurses, particularly community nurses, often operate within the framework of the social model of health, which espouses the need to consider individual, economic, social, cultural, geographical, educational, and employment factors, and their impact, when developing responses to the unique health needs of a community (Mahnken 2001). This practice diversity is rarely characterised by treatment of single focus health issues (for which there is an available evidence base). It often involves working with complex medical and personal needs that require autonomy and professional judgment based on clinical and practice experience.

Resistance to the adoption of EBP among nurses has been linked to the view that service delivery must be able to respond to and accommodate this diversity (Melnyk et al. 2000; Street 2001).

Although the inability of established evidence frameworks to respond to the complexity of primary care service delivery has been recognised increasingly across health disciplines (Ferlie et al 2001; Taylor et al. 2001; Weller & Veale 1999), evidence specific to primary care remains limited (Humphryes et al. 2002; McKenna, Ashton & Keeney 2004). This paucity of research applicable to the service delivery context plays a significant role in nurse perceptions of the inapplicability of EBP to nursing practice.

Access, analysis, and application of EBP

Research shows that nurses have low baseline knowledge of EBP and limited experience in the process of undertaking research, and accessing, analysing, and understanding research findings within the context of their own clinical practice (Clarke & Proctor 1999; Hunter 1999; Newman, Papadopoulos & Melifonwu 2000; Retsas 2000; Upton 1999a). This lack of a strong research culture manifests itself in a difficulty in making the transition from access to analysis, and then to practice application of evidence.

The science of EBP has been identified as a significant reason for this research/practice gap. Nurses are hesitant to adopt a paradigm that depends predominantly on a scientific/quantitative hierarchy of evidence (Bonell 1999) and an intellectualisation of knowledge (Walker 2000). Studies have shown that nurses value different aspects of knowledge-building, attributing great worth to the insights gained through qualitative methodologies in regard to the complexities of practice (McCarthy & Hegney 1998; Rolfe 1999; Rowe 1996; Upton 1999a, 1999b), especially rural practice (Keyzer 2000). There is ongoing debate within this discipline as to the appropriateness of a scientific research approach within the context of nursing practice, particularly community nursing and community nursing in a rural setting (Hunter 1999; Lipp 2003; McDonald & Smith 2001; McMurray 1998). While some argue that the science of EBP compromises and devalues the importance of the complex, non-scientific aspects of nursing practice (Mead 2000), others argue that the failure to adopt and apply EBP is likely to diminish the voice of the nursing profession in health service planning, development, and delivery (Bonell 1999; Mowinski-Jennings 2000).

The cultural norms that develop from a commitment to the qualitative aspects of nurse practice and research has affected the development of nurse skill in applying EBP to their practice. A consistent finding across studies is that nurses believe they lack the skills/ability to access and apply available evidence in the practice setting (Nilsson Kajermo et al. 2000; Olade 2003; Retsas 2000; Upton 1999a). This is particularly so when skill development must fit around the plethora of other priorities facing nurses in hospital and community settings (Newman, Papadopoulos & Melifonwu

2000; Olade 2003). In fact, Pollock et al. (2000) found that only 14% of nurses believed they were sufficiently trained to read and interpret research effectively, only 7% felt they had the time and opportunity to keep up to date with research findings, and only 5% felt they would be able to implement research findings by transferring them into daily practice. These findings mirror those of Nilsson Kajermo et al. (2000), Retsas (2000), and Upton (1999a) and indicate the research/practice gap that exists within this discipline.

The extent to which nurses have yet to embrace EBP in their practice is illustrated by Rizzutto et al. (1994), who revealed only 15.9% of nurses changed their practice as a result of research. These results have been reinforced by more contemporary research that confirms a research/practice gap continues to exist within this discipline (Briggs et al. 2003; Murphy 2003; Valizadeh & Zamanzadeh 2003).

While study findings suggest that the adoption of EBP within the nursing profession will require a shift in perspective on research and its role and relevance in nursing practice, it is important to note that this shift has partly commenced. The emergence of EBN centres and the incorporation of notions of EBP into undergraduate and postgraduate training are strategies aimed at altering the existing research culture within this discipline. Attitudinal studies for this discipline area generally show a strong, increasingly positive attitude to— and interest in—the use of EBP to improve health outcomes (Eller, Kleber & Wang 2003; Happell, Johnston & Pinikahana 2003; Harrison, Dowswell & Wright 2002; Parahoo & Mccaughan 2001; Upton 1999a). Where practitioners' attitudes were not positive—as in Olade's (2003) work on rural nurses where 76.4% of participants viewed EBP unfavourably—this was found to result from workplace issues rather than a resistance to the paradigm itself.

Workplace issues

Research into the extent to which workplace issues influence the uptake of EBP by nurses provides key insights. Nurses, regardless of their individual commitment to evidence-based decision-making, often work in environments without strong commitments to the scientific research tradition. Clinical settings, in general, do not provide opportunities for the development of a nursing research culture (Hunter 1999) and tend to lack the clinical leaders necessary to support the adoption of EBP (Hurley 1998). This is particularly true in the rural context (Gosling, Westbrooke & Coiera 2002).

Newman, Papadopoulos, and Melifonwu (2000), in the UK, and Retsas (2000), in (Melbourne) Australia, found that the central success factor for EBP uptake was the level of organisational

support for its development and implementation, and that without high levels of support, EBP could not be applied within the workplace. This support included adequate resource allocation (workload, time allocation, and financial); clinical leadership to guide the transition to EBP; an organisational culture that promotes the value of EBP in nursing; strong cross-disciplinary support (particularly from the medical profession) for nurse uptake of EBP; adequate training in the access and application of research; and the provision of research opportunities. Both studies identified that the absence of any of these factors impeded the sustained uptake of EBP by nurses. These findings are supported by the work of Happell, Johnston and Pinikahana (2003), Nilsson Kajermo et al. (2000), Nilsson Kajermo (2004), Olade (2003), Parahoo and Mccaughan (2001) and Valizadeh and Zamanzadeh (2003).

The influence of workplace support is especially relevant in the context of the nurse/doctor relationship. The fact that nurses, historically, have worked in clinical settings in support roles to doctors has the capacity to influence discipline adoption of EBP in a number of key ways. While changes in nurse education, the formation of centres for clinical excellence (such as the Joanna Briggs Institute), and the establishment of advanced practice positions have eroded traditional role boundaries (Adamson & Harris 1996; Keyzer 1997; Warlow 1996), conventional thinking continues to influence the priority nurses give to the adoption of EBP and a research agenda (Zeitz and McCutcheon 2003). Medical dominance in the workplace remains influential, with studies finding low levels of support from the medical profession for EBP uptake by nurses, as well as a view among many nurses that they lack the authority to change practice, even when supported by evidence (Hurley 1998; Nilsson Kajermo et al. 2000; Parahoo & Mccaughan 2001; Retsas 2000).

2.2.4 EBP and Allied Health

Allied health practitioners—who encompass a broad range of professions, including dietetics, occupational therapy, physiotherapy, podiatry and prosthetics/orthotics, psychology, and speech pathology—face similar issues and knowledge gaps to medical and nursing practitioners as they work to incorporate EBP.[3] As they work to incorporate EBP, allied health practitioners are facing similar issues and knowledge gaps as medicine and nursing. A review of the literature indicates that there has been a steady escalation in the number of available evidence databases available across the diverse allied health sector, (e.g., AMED for podiatry; NeLH: Speech & Language Therapy Portal for speech pathologists; OT Seeker for occupational therapy; PEDro for physiotherapy; and

[3] While the diversity of this grouping is recognised and acknowledged, they are clustered in this study as allied health professionals, unless specified individually.

RECAL Rehab Database for Prosthetics/orthotics). There has also been an increase in the amount of research being undertaken to assess health treatments (Keenan & Redmond 1999; Turner 2001b; Whiteford & Fossey 2002; Yorkston et al. 2001), however the scope and quality of this research needs to expand if allied health evidence bases are to parallel those available to medicine (Moseley et al. 2002; Vos, Willems & Houtepen 2004).

Studies on the perceptions of diverse allied health professionals about EBP identify generally positive attitudes towards the paradigm (Bennet et al. 2003; Jette et al. 2003). They indicate an increasing awareness and promotion of EBP as a fundamental mechanism through which to ensure/increase professionalisation and practice credibility and legitimacy. This is a consistent theme across physiotherapy (Clemence 1998; Connolly 2001; Hendricks et al. 2000; MacIntyre, McAuley & Parker-Taillon 1999; Turner 2001b), occupational therapy (Buchan 2004; McCluskey & Cusick 2002; Rosenwax, Semmens & Holman 2001; Yerxa 1993), and speech pathology (Bankson et al. 2001; Silverman 1998). The literature also signals an acknowledgment that EBP provides a mechanism to manage resources better in a constricting economic health environment (Kennedy & Stokes 2003; Logemann 2000).

Acknowledging this increase in, awareness of, and positive perceptions about EBP, uptake levels remain low for many allied health professions (Cusick 2003; Miller & Willis 2000; Turner & Whitfield 1997; Turner 2001b), as does allied health involvement in evidence development (McCluskey 2003). Allied health practitioners, like their counterparts in medicine and nursing, are concerned about the threats posed by EBP to levels of professional autonomy in clinical decision-making (Herbert et al. 2001) and have articulated the influences of clinical experience, the practice context, and skill/workplace constraints in shaping uptake.

Clinical experience, context, and science

Clinical wisdom and experience continue to be the central factors shaping practice decisions in allied health. This finding is consistent across occupational therapy (Bennett et al. 2003; Dysart & Tomlin 2002), physiotherapy (Turner 2001b; Tucker et al. 1996), podiatry (Keenan & Redmond 1999), and psychology (Kratochwill & Shernoff 2003; Wilson 1996). In a sector where there is an acknowledged need for expansion of the available evidence bases, concerns exist around the perceived validity and quality of available evidence (Bithell 2000; Herbert et al. 2001; Hardy 2000; Singleton 2002; Turner 2001b), which results in a tendency to continue relying on practice experience to inform treatment decisions. This use of experience as a guide to the decision-making process extends to a reliance within the sector on collegiate input and peer support over evidence as

the primary mechanisms in the decision-making process (Carr et al 1994; Turner 2001b). Beyond the issues of evidence availability and reliability, this trend has been shaped by a resistance to science and concerns around the relevance of EBP to allied health practice.

The centrality of science to EBP and the fact that available evidence generally focuses on a single treatment issue were identified, across the allied health sector, as compromising the relevance of available evidence. This issue was articulated most consistently by occupational therapy, an allied health discipline without a traditionally strong link to science. The client-centred practice philosophy of occupational therapy (Townsend 1998) and the emphasis within this field of practice on multi-faceted, often rehabilitative, interventions is at odds with many aspects of EBP. Cusick (2001, p. 101) summarises this dichotomy in her assessment that 'occupational therapy…has an obligation to consider, articulate, work with and enhance dimensions of a person which are immaterial…[patients] have an essential nature that goes beyond observable aspects of performance'. The view that the science of EBP is non-responsive to the complexities of the practice context was not, however, limited to practitioners of occupational therapy. It was raised consistently across discipline types (Bilsker & Goldner 2000), including those disciplines with strong links to science. Physiotherapy, arguably the most scientific of the allied health disciplines, has also articulated, in contemporary literature, the need for more qualitative research to respond to the diversity of the practice environment and individual clients (Baxter 2003; Gibson & Martin 2003; Herbert 2000; Herbert et al. 2001; Partridge 1996; Ritchie 2001).

The importance of incorporating contextual factors into decision-making, and the failure of evidence guidelines to do so, was a particular concern for allied health practitioners working in diverse rural and remote practice settings (Murphy 2003; Whiteford 2003).

Skill level

Studies into research utilisation by allied health have consistently identified—albeit to varying degrees—practitioner skill and confidence in accessing and applying research as a key influence on uptake of EBP (Dysart & Tomlin 2002; McCluskey 2003; Pollock et al. 2000; Singleton 2002; Welch 2002). Allied health practitioners, particularly those in professions without a strong research culture, need to develop skills in assessing the relevance and quality of available evidence (Green et al. 2000; Pollock et al. 2000).

While EBP has been consolidated into initial training for medicine, it remains a novel concept for a number of disciplines in the allied health sector. Although occupational therapy has a discipline-

wide agenda to improve knowledge and skill development through such programs as the Accredited OT program (AccOT) (Fricke & McComas 2001), the participation rate in training in EBP remains low (McCluskey 2003). The extent to which this reflects the situation across the allied health arena is unclear, although research into physiotherapy and psychology has documented a link between education levels and uptake of EBP and reiterated the importance of continuing education if uptake is to improve (Hoge, Tondura & Stuart 2003; O'Brien 2001; Turner 2001b).

Workplace issues

The organisational context remains the most influential factor in determining sustained, successful implementation of EBP by allied health professionals (Gosling, Westbrook & Coiera 2002; McCluskey & Cusick 2002; Singleton 2002). At the cultural/philosophical level, organisational support demands a strong, uniform and consistent message promoting EBP. This needs to occur, consistently, at the strategic and clinical management levels of the organisation. Ferlie and Shortell (2001) detailed the complexity of introducing a change agenda and the need for strategies to be incorporated across a variety of levels of an organisation when introducing EBP. The consistent failure within the domain of allied health to ensure an integrated approach to the introduction of EBP is problematic. Practitioners identify receiving messages from clinical settings and supervisors that are at odds with the EBP paradigm—prioritising clinical lore over research evidence as a guide to practice (Bilsker & Goldner 2000, p. 667). The lack of a management philosophy around the value of EBP makes adoption of the paradigm at the clinical practice level extremely difficult.

At the resourcing level, the most consistent theme, across all allied health disciplines, is the need for organisational resource commitment to support the introduction and implementation of EBP. Without this commitment, time and workload constraints continue to override the capacity of practitioners to adopt EBP in their practice (Bennett et al. 2003; Dysart & Tomlin 2002; Hamzat & Amusat 2002; McCluskey 2003; Metcalfe et al. 2000; Turner & Mjolne 2001; Turner & Whitfield 1997; Welch 2002). A lack of both cultural and resource support was found to be particularly problematic for allied health practitioners in remote locations who are faced with limited resources and access to professional development (Gosling, Westbrook & Coiera 2002).

2.2.5 EBP and Social Work

The literature for social work highlights that this discipline, unlike others in the health service sector, has an underdeveloped knowledge of EBP. Consistently, across nursing, medicine, and allied health there was some level of familiarity and an in-principle support for the concept, despite

different levels of proficiency with research utilisation. In the social work field, there is increased debate occurring about EBP, with the Australian Association of Social Workers National Executive recently approving the establishment of the Australian Centre for the Establishment of Evidence-Based Practice in Social Work. Despite these developments, the use of evidence to inform practice decisions remains minimal. Howard and Jenson (1999) found less than 1% of social work practice decisions were justified by reference to empirical evidence, a finding supported by other studies into the use of empirical evidence or outcome studies by social workers (Rosen et al. 1995; Rosen, Proctor & Staudt 1999; Sheldon & Chilvers, 2000; Thyer 2001a).

EBP is in the initial stages of development in the social work field, and a number of strategies have been established to facilitate its introduction. The Campbell Collaboration represents a significant step toward the establishment of the infrastructure and alternative methodologies needed to inform social work practice (Schuerman et al. 2002). This process has been advanced further by the extensive work undertaken to support the future development of the Cochrane and Campbell Collaborations as complementary strategies for enhancing EBP adoption (Chalmers et al. 1999; Chalmers & Boruch 2001; Davis, Petrosino & Chalmers 1999; Petrosino et al. 2000). At the professional development level, curricula are being reviewed to teach social work graduates skills in applying evidence to their practice (Howard, McMillen & Pollio 2003), and a number of texts outlining the process for using EBP in social work have been produced recently (Cournoyer 2004; Gibbs 2003). Work has been undertaken examining the interventions used by the medical, nursing, and allied health fields to increase EBP uptake levels. This work includes recommendations around the application of processes for enhancing uptake of EBP in the social work field (Gira, Kessler & Poertner 2004). Additionally, there has been a significant increase in the amount of research undertaken by social work over the last decade (Usher & Wildfire 2003)—notwithstanding concerns about the rigour of this research (Gambrill 2003a) and the application of research findings without giving detailed consideration to the impact of contextual factors (Hagell & Spencer 2004; Rushton & Dance 2002).

Despite these advances, the evidence base for social work remains weak, as do uptake levels of, in particular, scientific, quantitatively focused research—the dominant paradigm in the health service sector (Gambrill 2003a, 2003b; Usher & Wildfire 2003). While there has been an increase in field support for EBP (Cournoyer & Powers 2002), this review highlights a consistent rejection of the science of EBP by social work, underpinned by a distinct viewpoint around what constitutes valid knowledge and evidence.

EBP, science, and rejection

Many writers on EBP and social work argue that the scientific paradigm, which is characterised by the hierarchy of evidence, lacks applicability to the humanist and interpretivist nature of social work. Horner & Kindred (1997, p.16) define humanism as a theoretical perspective that 'assumes human beings are trying to make sense of their world and that human behaviour can only be understood from the viewpoint of the client(s)'. Social work operates from a practice philosophy underpinned by principles of reflection, mutuality, empowerment, interactivity, and the notion of 'person in situation' (Crisp 2004; Witkin & Harrison 2001, p. 294). This worldview is at odds with the science of EBP, particularly the single-issue focus of the RCT/systematic review, a modality criticised for lacking the basis from which to understand the complex individual, social, cultural, and environmental issues encountered by clients seeking social work support (MacDonald 2000; Webb 2001; Witkin & Harrison 2001; Wolff 2000). In the health services arena, this view means the social rather than the bio-medical model of health must guide social work practice to ensure it continues to respond effectively to the complex problems faced by the client base.

Hemmings (2000, pp. 250–254) offers an excellent analysis of the key factors that make it difficult for social work practice to adopt quantitative evidence bases such as the RCT/systematic review: These are:

- the prematurity of the profession in the evidence-based arena;
- the impossibility of reproducing the contextual components of social work practice in a clinical trial;
- the lack of resourcing in social work for establishing complex and multi-faceted clinical trials;
- the notion of 'differential attrition' (clients randomly allocated 'no treatment' or 'treatment as usual' in a social work context will invariably drop out of a study—thus introducing a variable unlikely to appear in scientific trials);
- the inability to establish entry criteria. Presenting problems in social work are often not the underlying cause of client issues, nor the eventual focus of service provision;
- the impossibility of establishing a set timeframe for cessation of treatment; and
- the fact that the multiple issues facing many clients blur the capacity to determine the cause and effect of treatment processes.

This assessment summarises the views put forward by those who oppose EBP for social work practice and who argue against the notion of scientific evidence as the 'gold standard' in service provision. The science of EBP is seen as discounting workers' values, discretion, judgement, and autonomy, and assuming, mistakenly, there is a capacity for transfer of evidence across contexts (Humphries 2003; Munro 2002; Oakley 2000; Thyer 1996; Webb 2001). There appears to be a strong belief that there are so many variables in research that evidence cannot be seen to be proven across individual cases (Atheron 2000). This view has resulted in a resistance to evidence about behavioural conditions and a belief that it is not possible to determine behavioural responses based on evidence (Sheldon 1998). Furthermore, the move to align social work to the science of EBP is viewed more as a strategy through which to increase the perceived professionalism of social work than as an acknowledgment of the superiority of scientific/quantitative to contextual/qualitative evidence (Humphries 2003; Witkin & Harrison 2001). McDonald (2003) articulates this viewpoint firmly when she argues against using EBP to legitimise social work practice and contends that, because social work draws upon divergent and contested knowledge bases, it needs to address structural issues such as power and oppression rather than focus purely on an individual's presenting problems—the dominant focus of EBP (Murphy & McDonald 2004, p. 135).

Within this context, the rejection of EBP can be seen as emerging from the notion of 'divergent knowledge'. The concept of 'divergent knowledge' relates to perceptions around the type of knowledge that is valued within the service setting. In the health setting, the knowledge gained through science is seen to be more highly valued than knowledge gained through practice wisdom (Murphy & McDonald 2004). This assessment is not unique to social work, having been raised consistently in analyses of EBP promoting the validity of different types of evidence (Ferlie, Barton & Highton 1998). This theme has been adopted by social work practitioners who contest the validity of knowledge gained primarily through the science of EBP (Humphries 2003; Randall 2002; Taylor & White 2001; Usher & Wildfire 2003) and champion the validity of alternative knowledge bases (Marks 2002).

Pawson (2003) has developed, from the literature, a typology of social care knowledge outlining thirteen types of knowledge ranging from experimental through to dialogical approaches. This classification system highlights the legitimacy of diverse knowledge types outside the rigidity of the formal evidence hierarchy that informs EBP in the health service setting. Developments such as this, built on accepted qualitative knowledge bases, may provide a mechanism with which to bring together evidence and clinical experience (Sexton 1999), although the potential efficacy of this approach remains unclear.

An alternative view to the rejection of science is found in the social work movement to promote EBP as a valid and validating framework for social work practice (Gambrill 1999, 2003a, 2003b; Gibbs and Gambrill 2002; Howard, McMillen & Pollio 2003). This movement articulates that practice has been shaped historically by a lack of evidence and a process of decision-making determined by what Crisp (2004, p.75) refers to as the 'imprimatur of those held in high esteem'. The maintenance of this approach is rejected because it is recognised that 'authority-based practice' (Gambrill 1999) has negative implications for the client and for the field: the client is disadvantaged by receiving treatments unsupported by a proven evidence base while the profession fails to maximise its potential to achieve best practice.

The essence of the argument put forward by this faction is captured in the following extract from Gambrills' (2003a) recent work on EBP and the social work profession:

> EBP is encouraging social work to move from an authority based profession to one in which ethical obligations to clients and students are honoured and critical appraisal and honest brokering of knowledge and ignorance thrive…encourages transparency and is designed to make decisions, and the reasons for them, explicit. (pp. 8–9)

Beyond practice improvements, the risk inherent in maintaining an 'authority-based' approach is that a lack of evidence is translated as a lack of practice effectiveness by other discipline areas (Reynolds 2000). It is argued that social work needs to shape the future development of EBP by contributing its own perspective and building research networks within the healthcare field (Dunston & Sim 2000).

The existence of these diverse views on the relationship between EBP and social work is emerging as a major contemporary issue within social work practice—an intra-disciplinary rift which, in the words of Howard, McMillen & Pollio (2003, p. 238) 'continues to widen across the social work profession'.

Social work and the research culture

Regardless of philosophical viewpoints around EBP, the discipline of social work remains under-developed in its understanding of the process, function, mechanisms for, and application of research (Shaw 1997). While the research pool is increasing, it remains limited (Shaw 1997) and is often of poor quality (Gambrill 2003a; Howard & Jenson 1999; Raw 1998). The move to incorporate evidence into social work practice is complicated by the lack of a research culture (Swinkels et al. 2002) and a paucity of the mechanisms that facilitate research dissemination and implementation

(Barratt 2003). This situation is complicated further by an absence of field consensus around the characteristics of social work research. The 2001 debate between Gomory and Thyer on theory and the nature of social work research (Gomory 2001a, 2001b; Thyer 2001a, 2001b) reveals a profession lacking in consensus on the parameters of research frameworks and highlights 'two very different and clashing explanations about how science and knowledge development can be done in our profession' (Gomory 2001b, p.77). This critical and unresolved factor within the discipline results from a two-tiered dilemma. First, the lack of consensus on the role of EBP in social work (encompassing notions of divergent knowledge and the value of different types of evidence) creates an intra-disciplinary split; and second, the lack of a research tradition weakens the discipline's capacity to validate its practice against either scientific or qualitative research. Consequently, beyond the argument of divergent knowledge is the issue of disciplinary capacity to implement change—regardless of the nature of that change.

The historical foundation of the discipline as a helping profession with a philosophy to empower clients and involve all key stakeholders in treatment processes has impacted on the amount and the type of empirical research undertaken. The research tradition within the discipline remains persistently weak; determinants of practice are grounded in factors such as the empowerment of clients; case progression; and feedback from colleagues and supervisory staff (Shaw & Shaw 1997). These last factors, in particular, have the capacity to be problematic in the development of a research tradition. Social work practice approaches are often inherited from supervisors, as are views relating to the value of EBP. The influence of supervisors in shaping practice approaches is not uncommon across disciplines; however, it can become more pronounced when there is no commitment to a research agenda and no counterbalance from research findings against which to assess practice approaches and the philosophies relating to evidence. This is particularly relevant when it has been shown that social workers have a tendency to favour particular methods based on workplace, supervisory, and collegiate influences, and to maintain these practice approaches to the exclusion of practice alternatives (evidence-based or otherwise) (Sheldon 1998). This lack of a research tradition is particularly significant in rural and remote communities where the social work philosophy on research is more firmly grounded in conservatism and collegiate influence (Murphy & McDonald 2004).

As identified previously, the movement to increase the use of research in social work is driven—perhaps most appropriately—by the issue of the rights of the client to be involved and informed in the intervention process. An argument is emerging that workers have a legal, ethical, and professional obligation to explore the evidence-based approach and ensure the knowledge they gain

is communicated to the client so the client is able to retain control of the intervention process at this most fundamental of levels (Gambrill 2003a; Thyer & Myers 1999).

Social work is gradually building a research culture (Gambrill 2003a, 2003b; Howard, McMillen & Pollio 2003). However, in light of the contextual and historical factors discussed previously, there needs to be a strong link between research and practice if this paradigm shift is to be embraced by the discipline (Randall 2002). If social work is to work effectively (and as a valued partner) in a multi-disciplinary team operating within an EBP-driven environment, it is critical this shift occurs (Murphy & McDonald 2004).

Practical constraints to uptake to EBP

Beyond the debate around opposition to science and an embryonic research culture, the literature search identified that social work faces similar issues to other health disciplines around the practical aspects of research utilisation. Workers believe they lack many of the skills needed to access, critically appraise, and apply evidence to their practice (Gambrill 2003b; Howard, McMillen & Pollio 2003; Mullen 2002; Swinkels et al. 2002). Although recent social work literature has promoted the increased availability of online resources as a potential mechanism for improving access to evidence (Crisp 2004), practitioners continue to face the same significant time and workload pressures (Crisp 2004; Sheldon & Chivers 2000; Swinkels et al. 2002) as other disciplines, particularly in under-resourced and isolated rural and remote locations (Murphy 2003).

2.2.6 Consistent Themes across Health Disciplines

While previous subsections in this chapter focus on EBP specifically as it relates to the individual health discipline, a review of findings highlights a number of consistent themes emerging across all disciplines. A highlighting of these consistencies will reveal the inter-disciplinary points of relevance relating to EBP across the health service sector.

The autonomy of practitioners

The literature provides a detailed insight into the importance that practitioners ascribe to the retention of work practice autonomy. Autonomy is not just about the retention of control over practice but also about control over choice of treatment options and decision-making at a variety of levels.

While the level of acceptance of EBP varies across disciplines, there is a general assessment that clinicians and practitioners are best-placed to understand clients' needs. For some practitioners, this belief can be accommodated as an integral part of evidence-based decision-making. They view the scientific paradigm as providing the structured backdrop against which individual clinical experience is played out. Sackett et al. (1996, p. 71) contend that good practitioners use individual clinical experience and the best available external evidence in practice decisions. A significant number of practitioners, however, continue to believe that EBP imposes a choice between practice experience and external, non-context-specific systematic research findings. As suggested by Rosoff (2001, p. 341), many practitioners 'accept the research findings are accurate in general, but tend to find reasons to believe that their patient is atypical and therefore merits treatment different from that which might normally be indicated by study results'. The consistency of this finding across disciplines, and the lack of literature on professional autonomy in the multi-disciplinary context, marks this as a pivotal issue for inclusion within the framework of this research study.

The practice environment

Individual practitioners across all disciplines are concerned that EBP is too closely aligned with the bio-medical model of health, which targets distinct health issues and assumes health outcomes can be assessed through measuring the rate of successful, discrete interventions (McDonald 2001). The dominant focus on outcomes pays scant attention to contextual complexities and the inter-relationship between social, cultural, economic, and geographic factors and their impact on the individual client. As outlined in the work of McDonald and Smith (2001), the essential difference is the adoption of a universal, one-size-fits-all approach versus an individualistic, made-to-measure approach to health service provision. Resistance to EBP that is based on the right to professional autonomy in decision-making is often linked to this individualistic worldview. The health practitioner operating from this domain sees EBP as having a limited capacity to ensure there is a 'best fit': a customisation of service delivery in line with individual need (Howard & Jenson 1999).

The practice context is also valued because it provides the health practitioner with a degree of practice consistency that is sometimes threatened by EBP. The constancy of context, by its very nature, allows the practitioner to develop practice approaches that are tailored, tried, and proven through clinical experience. EBP adoption requires an ongoing review and modification of practice in response to non-context specific research. As identified by Bilsker and Goldner (2000, p. 668), this requires the adoption of an active life-long learning philosophy and introduces a level of unpredictability resulting in a resistance of EBP across the health service sector.

A final, consistent theme to emerge relates to the importance practitioners place on collegiate input. Practitioners, across all disciplines and in all contexts, take practice direction from peers. Peer review, supervision, team meetings, and network forums all provide opportunities for individual practitioners to gain insights into techniques and approaches that have been proven to be successful. In theory, EBP offers this scope; however, insights gained from research and clinical testing can lack the impact of input from a known colleague or group of colleagues. This has been recognised within the evidence-based movement and incorporated in implementation interventions such as the use of clinical leaders and academic detailing (refer to chapter 3 for more detail on interventions). When a critical mass of colleagues adopts a modality, practitioners will then tend to adopt this approach—even if it lacks the substantiation provided by a systematic review of available evidence. This is particularly so when research is of poor quality, when a discipline has a weak research culture, and when workplace/supervisory support for structured application of research findings is low (Dunston & Sim 2000; Howard & Jenson 1999).

Divergent knowledge

The hierarchical classification, which rates different types of knowledge for their reliability and validity in informing practice decisions, has resulted in an inter-disciplinary division stemming from divergent views of what constitutes valued knowledge. Although this notion of scientific/quantitative versus contextual/qualitative evidence has been raised as an issue by all disciplines, the motivation for identifying the issues are informed by different worldviews. The view espoused by medicine and physiotherapy—that evidence from systematic reviews/RCTs is insufficient as the sole determinant of practice decisions—is linked to factors such as the practitioner/patient relationship; maintenance of autonomy; the need for contextual insights to a multi-dimensional health issue; the influence of workplace demands/structures; and collegiate relationships. In disciplines such as social work and occupational therapy, the promotion of qualitative evidence and (particularly for social work) the rejection of the RCT is driven by a fundamentally different worldview around what constitutes valid knowledge. These disciplines assess the RCT as lacking applicability to models that are inherently contextual, social, and psychological rather than bio-medical. These disciplines value evidence other than that gained through the RCT—despite the validity allocated to this evidence type in established evidence hierarchies. This divergence of views results in the marginalisation of non-scientific disciplines, whose evidence is not given the official imprimatur of legitimacy. This subsequently undermines the capacity for equitable and inclusive decision-making within the multi-disciplinary team (Ray 1999; Murphy & McDonald 2004).

Competing views of health and illness

Closely linked to notions of divergent knowledge and the nature of scientific evidence are competing views of what constitutes health and illness. The literature identified consistently that the RCT is based on very rigid notions of health and illness as it focuses on single-issue bio-medical conditions. These notions fail to take into account the multi-dimensional issues affecting the health and wellbeing of an individual patient. The failure to address these issues is signalled in the identification, across disciplines, that there is a paucity of evidence for primary care service delivery. While this is an issue across disciplines, it is particularly relevant for social work and occupational therapy. The nature of sociobehavioural factors and occupation are such that definitions of health and wellbeing operate across a much broader dimension than that encompassed by traditional definitions of mortality and morbidity. The impacts of these different worldviews on health and illness, and the link to uptake of EBP, have yet to be examined within the literature in relation to multi-disciplinary team practice.

2.2.7 Implications for this Study

The previous sections have examined the implementation issues faced by different health disciplines as they work toward the adoption of EBP in service delivery. For some disciplines, EBP is accepted and promoted—notwithstanding reservations relating to workplace, context, resource, and professional autonomy issues. For other disciplines, the adoption of EBP will require a major shift in focus, perspective, and practice for both individual practitioners and the disciplines themselves. While many similar themes emerge across disciplines, they are, on reflection, motivated by different world-views. Each discipline perceives their place, and the place of other disciplines, differently within the system. The perceptions as to their role (and the value of what they practice) have developed as a result of specific training, practice experience, history, and past and present inter-relationships with other members of the healthcare system. The literature highlights that the ways in which these complexities impact on uptake of EBP remains under-researched. An important aspect of consolidating the framework for this research study was, therefore, to examine the available research pool on multi-disciplinary practice—particularly multi-disciplinary practice in regard to EBP—in order to clarify existing levels of knowledge and areas requiring further research.

2.3 MULTI-DISCIPLINARY PRACTICE ISSUES

The data sources for this stream of inquiry were gained through electronic searching of Academic Search Premier (open search), MasterFILE Premier (open search), Medline (FirstSearch) (1990 – 2001), Psychology & Behavioural Science Collection (open search) and the Sociological Collection (open search). The key words 'multi-disciplinary evidence-based practice', 'multi-disciplinary evidence-based healthcare', 'health care teams', 'inter-disciplinary teams' and 'multi-disciplinary healthcare teams' were used to identify available research literature.

A study of these literature pools identifies a number of recurrent points on 'professional identity', 'power and professional identity', 'professional socialisation', and 'occupational boundaries'. While no studies specific to the impact of these factors on the adoption of EBP by multi-disciplinary teams in rural/remote environments were found, the literature provides critical insights into how professional inter-relationships and discipline frameworks shape decision-making within the multi-disciplinary team.

2.3.1 Professional Inter-relationships

Recurrent themes throughout the literature, identified as intrinsic to team functioning and decision-making, are those of professional boundaries; the processes of professional socialisation that define disciplines; and the ways in which disciplines relate to and with each other (Abramson & Rosenthal 1995; Cott 1997, 1998; Cowles & Lefcowtiz 1992, 1995; MacLean, Plotnikoff & Moyer 2000; Milligan et al.1999; Norris 2001; Rawson 1994; Ray 1999; Schofield & Amodeo 1999; Wolf 1999).

Professional inter-relationships and the medical profession

The literature abounds with analyses of the relationship between medical practitioners and other health professionals working in multi-disciplinary health teams. The most consistent theme to emerge relates to medical dominance and the senior role adopted by the medical practitioner when working with staff, in particular nursing staff. The works of Abramson and Mizrahi (1996), Cott (1997, 1998), Cowles and Lefcowitz (1995), Davidson (1990), Eatock (2000), Gage (1998), Gross and Rabinowitz (1996), Hammond, Bandak and Williams, (1999), Larson (1999), Mitchell (1998), Nandan (1997), Netting and Williams (1996), Ohlen and Segesten (1998), Peck and Norman (1999), Retsas (2000), Schofield and Amodeo (1999), Warlow (1996), Waskett (1996) and Willis (1990) focus specifically on this phenomenon and identify some critical impacts across a number of domains. These include:

- Medicine has secured a monopoly and dominance in the healthcare arena.

- Professional inter-relationships between medicine and other health professions are based on the status attributed to each during a process of professional socialisation.

- Power imbalances are reinforced by gender and profession stereotyping. Warlow's 1996 literature review highlighted gender imbalances in the doctor/nurse relationship, with medicine being a male-dominated profession, empowered by patriarchy and the historical construct of the submissive nurse subordinate. Within this relationship, doctors consider they have little or no accountability to nurses on treatment decisions (Larson 1999). Warlow identified that the general public, health organisations, and other health professionals reinforce this socialisation and stereotyping. This multi-dimensional assessment of medical dominance was reinforced by Willis (1990) when he identified medicine as dominating at the economic, political, social, and intellectual level of the health system.

- There has been an increased challenge to medical dominance by other disciplines over recent years (Cott 1998; Snelgrove & Hughes 2000). However, Cott found the transfer of power remained limited to 'higher status professionals' with nurses continuing to adopt subordinate positions within health teams.

These findings on gender, power, and the dominance of 'doctor-centric' views were also identified in relation to the professional inter-relationship between medicine and social work (Warlow 1996). Medical practitioners often ascribe a low status to social work and have difficulty in defining the role and skill base of the social worker. This results in the view that social work tasks can be picked up readily by others in the team, with the skill-base required for social work practice often poorly understood (Gross & Rabinowitz 1996; Netting & Williams 1996). This view creates and maintains a power imbalance between social work and other disciplines, particularly medicine, since medicine remains the profession with the control of referrals and the capacity to decide when social work services should be accessed. This is particularly pertinent to the multi-disciplinary team setting in which it has been identified that equity, and a clear understanding of role function, is central to successful team functioning (Bliss 1998).

Medicine's power to control referrals also impacts on the professional inter-relationships between medicine and allied health. This is particularly relevant in instances where there are overlaps in treatment methods, and where referral decisions are made by the doctor rather than by the disciplines involved. This results in an unequal relationship being maintained between disciplines

and adds weight to claims of medical dominance. Overall, however, medical dominance is less of an issue in relation to allied health—a 'higher status professions' area (Cott 1998). The specialised nature of allied health practice—particularly scientifically based allied health practice such as physiotherapy and prosthetics/orthotics—decreases the likelihood of role blurring, of allied health practitioners being perceived as helpers/extenders, or of practitioners delivering a service perceived as within the professional domain of the medical practitioner (as occurs with the nurse and the social worker) (Bilsker & Goldner 2000; Clarke & Proctor 1999; Norris 2001; Pollock et al. 2000).

> The different status of health professionals that results from perceived differences in professionalism and autonomy and variations in professional socialisation equates to differences in the extent and type of power held by these professionals. Medicine, as the most senior of the professions in the health service hierarchy, has been attributed both expert and positional power as a consequence of, and as an extension to, the process of professionalism and socialisation (French & Raven 1959; Lipman 2000; Moore 1970). Power differentials are likely to impact on factors such as spheres of influence, structure, and decision-making in the multi-disciplinary team, and the ability to drive or manage change—particularly in rural environments marked by conservatism and set perceptions relating to role sets and notions of power and influence and medical dominance.

With these power relationships in mind, it is important to consider the perspective of doctors regarding their role within the health services team. Hammond et al. (1999) found that, across all disciplines, the medical practitioner was the least willing to share responsibility for client care and decision-making on patient treatments. While disciplines such as nursing and social work are committed to entering into collaborative partnerships with medicine, studies have found there is limited reciprocity from the medical profession on collaborative decision-making and shared responsibility (Abramson & Mizrahi 1996; Larson 1999; Nandan 1997).

It is important to consider the practice consequences of these professional inter-relationships issues. Schofield and Amodeo (1999) explored the impact of medical dominance on the functioning of the multi-disciplinary team. They found the differing status accorded to health disciplines (including nursing) impacts on the structure and treatment direction of the team. In regard to EBP, while the literature specific to this issue is limited, the work of Retsas (2000, p. 604) illustrates the potential impacts of power and practice imbalances on uptake. Retsas found that more than 50% of 400 nursing staff interviewed would not adopt or take a lead role in searching out and attempting to implement treatments using an evidence-based approach because 'physicians will not co-operate

with implementation'. Interestingly, Scott, Heyworth and Fairweather (2000) found that doctors cited inter-disciplinary tensions rather than discipline dominance as a reason not to use evidence.

While power differentials are maintained and health disciplines continue to defer decision-making to medical staff, EBP adoption is likely to remain dependent on levels of promotion/rejection of the paradigm by medical staff, rather than as a result of team-based decisions to modify practice based on contemporary health care frameworks. No research was found on this issue in the context of rural multi-disciplinary teams, which marked it as an area for examination through this research study.

Professional inter-relationships across other health disciplines

In addition to insights around the professional inter-relationships between medicine and other health professionals, the literature review also provided some detailed insights into professional inter-relationships outside these parameters. These are:

- perceptions of social work roles;
- levels of professionalism attributed to different health disciplines; and,
- levels of support for team based approaches to practice.

Cowles and Lefcowitz (1995) found significant levels of role-blurring between social work staff and other health disciplines. Task boundaries for social work practice are consistently modified by other health practitioners because they are unclear of the types of tasks specific to the social work domain. In addition, many health practitioners hold the view that they have a skill base equivalent to the social worker (Badger & Ackerson 1997; Davidson 1990; Eatock 2000; MacDonald 1991; Murphy & McDonald 2004; Netting & Williams 1996). This level of role-blurring impacts on multi-disciplinary team function because effective team functioning requires mutual trust in competence levels (Bliss 1998; Gage 1999), and this is unlikely to develop if inter-professional relationships fail to acknowledge the practice value of individual team members.

An extension of this lack of role clarity is found in the issue of professionalism. Even when different health professionals understand the professional practice parameters of other disciplines, the level of value and professionalism they attribute to the work and status of other professions varies. Social workers and nurses, in particular, have long been classified as semi-professionals (Cooper, Stevenson & Hale 1996; Lenkman & Gribbins 1994; Soothill, Mackay & Webb 1995) and are considered to have a lesser status in the health services hierarchy (Cott 1998).

The need for diverse disciplines to establish occupational boundaries, particularly in areas where there is role-blurring and a capacity for treatment overlap, is critical within the multi-disciplinary team (Brown, Crawford and Darongkamas 2000; Cant & Sharma 1998; Norris 2001; Peck & Norman 1999). Within the context of the multi-disciplinary team, the issue of variations in perceptions regarding professionalism and professional boundaries is likely to impact on levels of equality in decision-making around practice approaches and any decisions relating to the uptake of new practice paradigms.

A final, brief point relating to the multi-disciplinary context and research into inter- professional relationships: while the literature pool has revealed a significant number of barriers to multi-disciplinary practice, it has also revealed an increasing level of support across health disciplines for the adoption of team-based approaches to practice. Consistently, there is a growing acknowledgment of, and support base for, the provision of services through team-based approaches. Akhavain et al. (1999), Beattie (1994), Kumar (2000), Leathard (1994), Nandan (1997), Schader et al. (1999), Selby Smith and Crowley (1995), Slade, Rosen and Shankar (1999), Soothill, Mackay and Webb (1995) all identify a shift toward the adoption of team-based approaches as the most appropriate mechanism to achieve improved outcomes for clients. In a similar vein, Atheron (2000) sees EBP as a means of ensuring a coordinated service delivery approach across disciplines and organisations. The extent to which this is reflected in the rural context and is able to be implemented successfully to enhance decision-making around the uptake of EBP will be a point of focus for this research study.

2.3.2 Discipline Frameworks and EBP

To this point, the review has painted a clear picture of the differences between health disciplines in relation to their perceptions of EBP and has highlighted the professional inter-relationship issues likely to impact on practice. Linked to, and extending these issues, is the notion of disciplinary frameworks and their impact on the adoption of EBP.

As noted, differences stemming from undergraduate training, alignment to a research culture, perceptions relating to autonomy, authority, and professionalism all operate to create the characteristics that define and make a health discipline unique. Disciplines without a strong research culture often lack the skills and training necessary to incorporate EBP into practice. These skills include competency in accessing information technology; the ability to frame a clinical question; knowledge of and ability to apply the staged process of research utilisation; and the capacity to assess the validity and applicability of research data to meet the needs of clients encountered in the

practice setting (Bilsker & Goldner 2000; Dunston & Sim 2000; Newman, Papadopoulos & Melifonwu 2000; Pollock et al. 2000; Retsas 2000).

The level of proficiency in reading and assimilating scientific evidence varies. Within the context of EBP and the multi-disciplinary team, these variations are likely to threaten the capacity of team members to perceive themselves (and be perceived) as equal partners in problem solving, critical thinking, and decision-making on health issues. For some participants, incorporation of evidence to inform health decisions will essentially be an application issue (How do I apply this research to my practice?), while for others it will be a research proficiency and an application issue (What does this research mean? Is my understanding of what it means accurate? How do I apply this research to my practice if it proves to be applicable?). Given the issues of authority and medical dominance already identified, the extent to which disciplines less conversant with EBP are likely to lead decision-making in the multi-disciplinary team is questionable.

Closely linked to proficiency with research is the issue of types of research evidence. The literature has identified that, while scientifically based disciplines such as medicine and physiotherapy rely more heavily on RCTs/systematic reviews (Dawes et al. 1999; Muir Grey 1997; Stevens et al. 2001), disciplines with a less positivist research tradition (such as social work) argue that case study and research practice evidence (Atheron 2000) are more relevant to the needs of their discipline areas (Dunston & Sim 2000; Howard & Jenson 1999; Reid & Zettergren 2000). There is significant debate regarding the value of different evidence types (Ferlie, Wood & Fitzgerald 1999), and the movement toward the incorporation of qualitative data in building evidence bases for practice is growing (Ashburner 2001; DiCenso, Cullum & Ciliska 1998; Dunston & Sim 2000; Hemmings 2000; Jordan & Jordan 2000; Lemmer, Grellier & Stevens 1999; McDonald & Smith 2001; Morris 1999; Silagy & Haines 1998; Stevens et al. 2001; Weller & Veale 1999). There is an acknowledgment (to varying degrees), across all health disciplines, that purely quantitative data is insufficient to address the needs of context, discipline frameworks, and the individual client. This is likely to increase the acceptance of different evidence types and, linked to this, increased validation of the evidence bases of less scientifically based disciplines. Currently, however, the scientific paradigm is the most prevalent and most valued in the EBP movement. Perceptions of the methodological superiority of science and the notion of ‘divergent knowledge’ have been discussed previously; however; it is important to reconsider these issues within the context of the multi-disciplinary team. Intrinsic to working effectively in team problem-solving is the belief, among all team members, that each discipline brings with it unique and effective treatment options. In circumstances where some members of the team are seen to use a ‘gold standard’ of evidence while

others use evidence from an 'officially' marginalised base, the capacity to achieve—and be perceived to have—equal status is doubtful.

In conclusion, members of multi-disciplinary teams who have undertaken different training processes, have been shown to vary in not only their commitment to the scientific model but also in their understanding of what constitutes evidence (Reid & Zettergren 1998) and often view their role, and that of other health professionals, from different perspectives. This view depends on the focus of their work, the nature of their profession, and the relationship they have developed with other disciplines. How this is likely to impact on uptake of EBP remains under-researched. Assessments from the UK Primary Care Trusts (Derry 1999) indicate that multi-disciplinary teams continue to develop strategies around how to work together in the practice context. The requirement to develop an integrated approach underpinned by evidence is likely to create major implementation problems, particularly given the current paucity of evidence specific to multi-disciplinary practice approaches (Swinkels et al. 2002).

2.3.3 Implications for this Study

In the previous section, a fundamental issue that emerged related to how professionals within multi-disciplinary teams view their practice and the practice of other disciplines. The literature review has highlighted that the type of questions needing to be addressed within the scope of this study relate to the value different disciplines place on their own practice vis-a-vis the practice of other disciplines; the impact of professional socialisation and stereotyping on multi-disciplinary practice; and the value placed on EBP by different disciplines within the multi-disciplinary team.

2.3.4 Summary of Methodologies used in the Literature Review Research

All but twenty of the 215 empirical studies and discussion papers reviewed focused either on rurality, on issues specific to individual disciplines in their use of EBP, or on multi-disciplinary practice issues unrelated to EBP. These figures clearly signal the paucity of research in multi-disciplinary EBP in the rural context. Further, of the empirical studies considered, while twelve explored EBP in the rural context and seven examined EBP in relation to multi-disciplinary practice, only two studies (Murphy 2003; Taylor. Campbell & Campbell 2003) focused specifically on EBP and multi-disciplinary practice in the rural and remote context.

Surprisingly, despite the emphasis placed by the evidence-based movement on the use of clinical trials and scientifically based evidence, the use of quantitative methodologies in the research studied for this literature review is limited. The literature highlights the importance of using case studies,

in-depth, and semi-structured interviews and focus groups to gain insights into critical factors driving adoption of EBP. This approach maximises the input gained from relevant stakeholders and reflects the growing recognition of the need to use qualitative data for effective health research. The consistency of the use of qualitative methodologies in the literature has helped validate the approach taken in this research study.

While the literature review was extensive, a number of empirical studies were pivotal in informing the concepts raised in previous subsections. A summary of these is shown in Table 1.

Table 1: Overview of the key empirical studies reviewed in the literature

Study	Research Design	Methods
Abramson & Mizrahi (1996)	Two-stage study across 12 hospitals of different size and locations	Part 1 case study of perspectives of pairs of social workers and doctors about levels of collaboration. Part 2 aimed to identify positive and negative collaboration experiences
Adamson & Harris (1996)	Single-stage, multi–site metropolitan (Sydney) quantitative study of allied health professional in health settings	Questionnaire distributed to 604 health professionals: 57 speech pathologists, 115 occupational therapists, 124 hospital nurses, 137 community nurses
Badger & Ackerson (1997)	Single-stage study of rural primary care physicians	Literature review Questionnaires to 91 doctors relating to GP views of social workers and their roles
Bedregal & Ferlie (2001)	A single-stage metropolitan (Chili) qualitative study of key stakeholders view of implementation of EBM	Focus groups with nurses, policy makers doctors, managers and allied health seeking to clarify group perceptions, aspirations and thoughts on EBP
Bennett et al. (2003)	Single-stage quantitative study of occupational therapists across Australia	Questionnaire distributed across Australia to random sample of 1491 OTs. Response rate of 44% (n=649)
Bilsker & Golder (2000)	Single-stage study of mental health program	Semi-structured interviews with postgraduate and resident mental health workers on EBP application
Cant & Sharma (1998)	Single-stage study examining concept of professionalisation	Semi-structured interviews with complementary medicine practitioners
Clarke & Proctor (1999)	Multi-staged case study of health disciplines held at University of Northumbria (Newcastle)	Seminar groups run as participatory focus groups Held weekly for a year with groups of 10, for 10 seminars, in 10 week blocks to identify inter disciplinary issues relating to research evidence
Cott (1997) (1998)	Two-stage case study across 5 wards of a multi-level care facility	In depth, semi-structured interviews with 26 staff using a social network analysis to identify roles and levels of professionalisation Survey of 153 team members using self-administered questionnaire

Study	Research Design	Methods
Cowles & Lefcowitz (1992)	Single-stage study across 4 hospital	Self-administered questionnaire of 174 doctors, 273 nurses and 40 social workers re perceptions as to social worker roles
Cowles & Lefcowitz (1995)	Single-stage study across all general medical and surgical hospitals in Indianapolis with more than 1 social worker	12 page questionnaire administered to a random sample of 658 doctors (26.4% response rate), 603 nurses (45.3% response rate) and 48 social workers (83% response rates)
Dowswell et al. (2001)	Two-stage study with general practitioners across two health districts	Interviews with 35 general practitioners 29 item questionnaire
Ferlie, Wood & Fitzgerald (1999)	Single-stage case study design involving 4 clinical topics in acute setting	Structured interviews Literature review 130 interviews with clinicians & stakeholders (27 orthopaedic) on value of EBP & evidence types
Freeman & Sweeney (2001)	Single-stage qualitative study across three geographically separate areas	3 focus groups each with 6–8 GPs each lead by an experienced group leader on attitudes to EBM
Gosling, Westbrook & Coiera (2002)	Single-stage qualitative multiple site study on use of online resources in hospitals in rural and metropolitan Australia	Focus group and interviews with 61 staff (doctors, nurses, allied health and management)
Gross & Rabinowitz (1996)	Single-stage study of primary care physicians	Self-administered questionnaire of 872 physicians (77.6% response rate)
Guyatt et al. (2000)	Single-stage case study of British GPs	Literature review Unsystematic observation of internal medicine residency training of evidence-based practitioners
Hammond et al. (2000)	Single-stage study of 3 inpatient units of 345 bed chronic care psychiatric facility in western US	The Health Role Expectations Index was used to measure attitudes to unilateral and egalitarian role functions Sample population were hospital administrators (4.2%), nurses (39.2%), doctors (9.2%), psychologists and social workers (12.5%), psychiatric technicians (30.8%) and occupational therapists (4.2%)
Hemmings (2000)	Three-stage model of psychological therapies research	Review of 26 reports on psychological therapy research/evaluation to assess evidence used
Kronick et al. (2003)	Two-stage study of rural physicians	80 rural physicians with internet access Provision of educational intervention on internet use Pre- and post-intervention questionnaire
Lescoe-Long & Long (1999)	Single-stage case study of 1000 bed teaching hospital	Review of levels of non compliance of clinical practice guidelines
McAllister et al. (1999)	Single-stage quantitative study of physicians on uptake of EBM	Questionnaire involving 496 physicians
Mayer & Piterman (1999)	Single-stage qualitative study with GPs across three metropolitan locations	5 Focus groups with 27 GPs using grounded theory data analysis techniques

Study	Research Design	Methods
Murphy (2003)	Quantitative component of a two-stage empirical study across three study sites in rural and remote Australia	Questionnaire to 331 (207 responses) multi-disciplinary team members working across three case study sites testing knowledge, uptake and attitudes relating to EBP
Murphy & McDonald (2004)	Sub-component of a larger qualitative study across three sites in rural Australia focusing on issues for social workers in the uptake of EBP	Group and individual interviews with three multi-disciplinary teams and 6 individual social workers across three study sites examining issues of uptake, applicability and inter-disciplinary practice uses relating to uptake of EBP in the team context
Nandan (1997)	Single-stage study of 79 120+ bed nursing homes	Questionnaires to all social workers at each facility. Literature review. Use of Hall's Teamness Index and Hall and Williams Styles of Teamwork Inventory
Netting & Williams (1996)	Single-stage study of nine sites	Semi-structured interview of 105 staff (40 doctors, 14 nurses, 6 social workers, 4 para-professionals, 2 physicians assistants and 31 admin staff) on professional identities, roles, and relationships
Newman, Papadopoulos & Melifonwu (2000)	Single-stage case study involving a 25 bed ward in one hospital	Action research approach to identify problems & solutions to apply multi-disciplinary evidence-based practice approach
Nilsson Kajermo et al. (2000)	Two-stage qualitative workplace study	Involved the use of three questionnaires and focus groups. Stage 1 involved 237 nurses in clinical practice. Stage 2 involved 37 teachers, 166 students, 33 nurse administrators, and 127 physicians on barriers and facilitators to research utilisation
Norris (2001)	Single-stage case study of professionals working with muscular-skeletal problems across 4 geographic areas in New Zealand	Semi-structured interviews with 83 treatment providers and 13 professional associations. Included 17 GPs, 8 chiropractors, 17 physiotherapists, 8 osteopaths, 6 massage therapists, four acupuncturists re identity & roles
Ohlen & Segesten (1998)	Single-stage case study of nursing staff	Semi-structured interviews with 8 nurses to identify issues of professional identity
Olade (2003)	Single-stage quantitative study of nursing staff	Descriptive/correlational questionnaire of 106 nurses in 6 rural practice settings
Patronis Jones (1997)	Single-stage study of 600 bed not for profit teaching, research and tertiary centre	Interviews and focus groups with 345 multi-disciplinary professionals (nurses, doctors, pharmacists, radiologists, OTs, physios, and administration) to identify a conceptual definition of multi-disciplinary collaboration
Peck & Norman (1999)	Single-stage study of adult community mental health service across three localities	Series of workshops with 61 direct care staff: 7 psychiatrists, 11 nurses, 12 social workers, 12 occupational therapists, 7 clinical psychologists, 9 housing workers, and 3 community support workers
Pollock et al. (2000)	Two-stage study of stroke rehabilitation allied health services	Focus groups (105 participants) to identify perceived barriers to uptake Postal questionnaires rating level of agreement to identified barriers

Study	Research Design	Methods
Retsas (2000)	Single-stage study of Melbourne teaching hospital	Literature review Self-administered questionnaire of 400 staff. The questionnaire incorporated the 29 item Barrier to Research Utilisation scale to identify why evidence was not adopted in practice
Shaw & Shaw (1997)	Single-stage study involving cross section of British public & volunteer agencies	In depth, unstructured interviews with 15 social work practitioners to identify what guides practice
Solveig Fagermoen (1997)	Two-stage study of nursing staff	1 survey of 767 randomly selected nurses with 1, 5 and 10 years experience on personal & professional identity. In depth interviews with 6 nurses on provision of patient care
Stewart et al (2000)	Single-stage case study of patients with CHF and >1 previous hospital admissions	100 patients with congestive heart failure were tested to assess benefit of multi-disciplinary practice
Taylor et al. (2001, 2002)	Single-stage qualitative study of rural GPs	Interviews with 89 general practitioners on barriers and solutions to implementation of EBM
Tracy, Dantas & Upshur (2003)	Qualitative component of larger multi-methods project	Interviews with 15 physicians
Turner & Mjolne (2001)	Quantitative multi-site international study on journal utilisation (England and SE Australia)	Postal questionnaire to physiotherapists at 150 facilities on research utilisation using journals. 62% response rate for England, 55% response rate in Australia
Upton (1999a)	Single-stage quantitative study on attitudes about EBP	370 questionnaires (74% response rate) sent to nurses, midwives and health visitors
Young & Ward (1999)	Single stage survey of GPs on knowledge and use of evidence databases	Self-administered questionnaire of 311 GPs assessing levels of awareness and use of Cochrane library and access to internet

This review of the literature highlights the degree of variance that exists between disciplines in how they perceive the place of EBP in their practice. The professional boundaries that characterise diverse health disciplines influence and shape how each discipline approaches the adoption of evidence in practice. Importantly, when transferred to the multi-disciplinary context, these differences result in a complex series of inter-connected relationships instrumental in determining the uptake of EBP. These relationships become even more complex when the unique influences of rural environments are incorporated.

To illustrate the scope of these inter-relationships adequately, and to chart the fundamental differences within and across diverse discipline areas, a meta-analysis of literature findings was undertaken. This meta-analysis synthesises the intersection of rurality, multi-disciplinary practice,

and EBP and demonstrates the multiple dimensions in place across these domains. The process has been charted and is depicted diagrammatically in Figure 1 (seperate attachment). This depiction highlights the complexity of attempting to introduce EBP to the multi-disciplinary rural practice environment and reinforces the need to develop, and explicitly apply, a theoretical framework and study design that provides an opportunity to address these complexities through empirical research. These theoretical and methodological processes are detailed in chapters 3 and 4.

Figure 1: Association Pathways Map

Electronic CD version

Please note that the hard copy of Figure 1, The Association Pathways Map is provided in a separate pocket on the following page.

Figure 1: Association Pathways Map:

Hardcopy Version

2.3.5 A Focus for Further Research

In summary, this literature review has provided the mechanism to explore key knowledge gaps on uptake of EBP. Charting these knowledge gaps has identified a significant research problem and validated that empirical research must be undertaken to develop an understanding of the ways in which disciplinary and inter-disciplinary practice frameworks, within the rural and remote context, impact on the uptake and applicability of EBP. This progression from analysis of the literature, to identification of the research problem, through to establishing the study's research parameters is outlined in Figure 2.

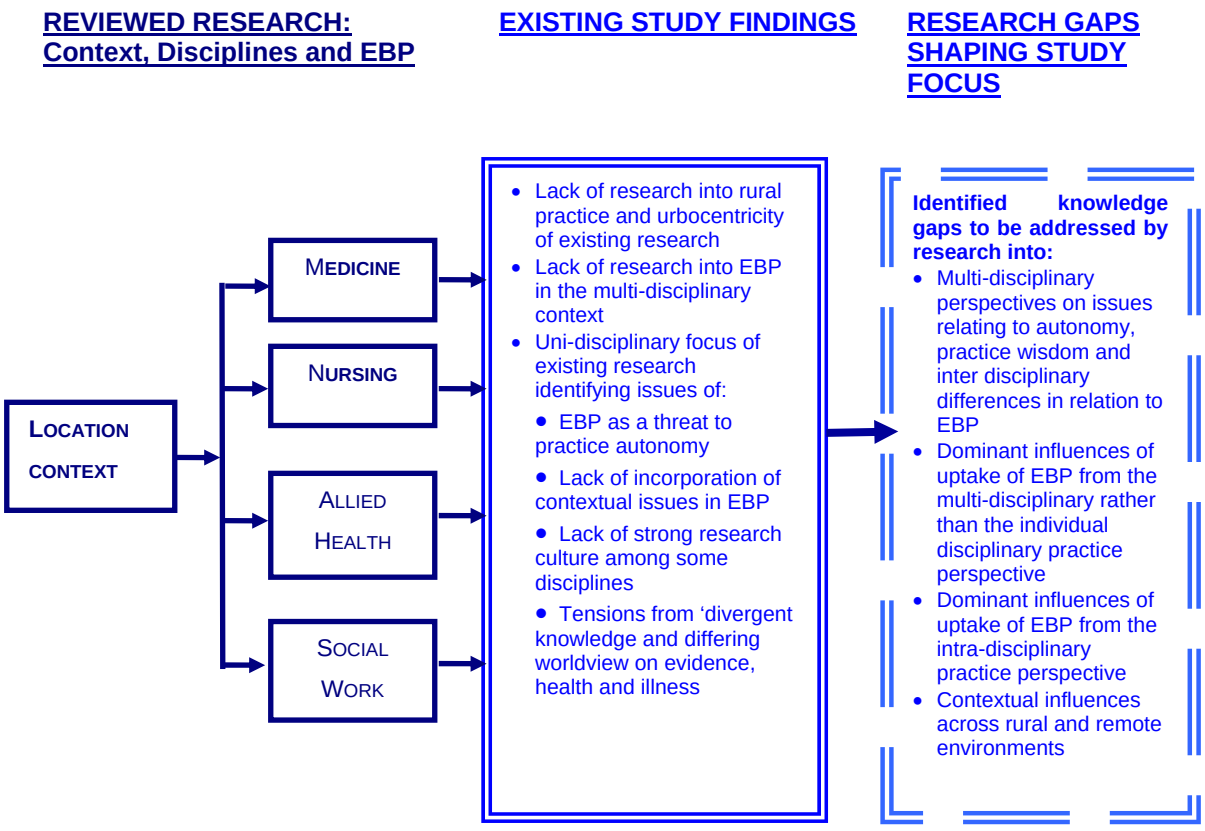

Figure 2: EBP Research: The Literature Review Shaping the Research Focus

3
Theoretical Frameworks

FROM THE LINEAR TO THE MULTI-DIRECTIONAL…A NEW FOCUS FOR THEORY ON EBP IN RURAL AND REMOTE PRACTICE

3.0 INTRODUCTION

This chapter, of three sections, outlines and critically analyses the theoretical frameworks used in previous research on EBP and those underpinning this study[1].

The first section explores the prevailing epistemology and theoretical framework that dominates EBP in the health sector, and which is instrumental in driving the interventions used to increase the use of evidence in practice. Also presented is a detailed assessment of research studies on implementation interventions for EBP. This assessment supplements those studies examined in the literature review and is considered separately to accommodate their diversity in foci. While the previous chapter (in line with Yin's [2003] description of the literature review process) determined existing parameters of knowledge and, identified and addressed the research problem, this chapter argues for a shift in the conceptualisation of EBP utilisation from traditional frameworks to an alternative theoretical perspective: from the 'linear to the multi-directional'. A detailed examination of the key implementation interventions currently dominant in the health sector is included in order to clarify the nature of the intervention; examine interventionist effectiveness in increasing EBP uptake; and, critique the theoretical perspectives, methods and assumptions underpinning each. The second section examines the emerging movement to consider EBP from theoretical perspectives alternative to those currently dominating the implementation of EBP, and includes a review of the work of Dopson et al. (2002) and Ferlie et al. (1999, 2001, 2002), and examines the interpretivist theory they apply to what has been an essentially scientific paradigm. Section three outlines the epistemological perspective and higher order theory applied in this study.

[1] Theoretical Frameworks refers to the theory base used to make sense of EBP. Theory itself is defined, according to Blaikie (2000, p. 141) as: a related set of statements; about relationships between concepts; with a certain level of generality; which are empirically testable; and which, when tested, have a certain level of validity. Applying this definition, theory is seen as providing some explanation for, and subsequent direction through which to understand, how EBP is planned, developed, and implemented.

3.1 EBP, EPISTEMOLOGY AND THEORY

3.1.1 Epistemology and EBP

The evidence-based movement has grown from a theoretical tradition informed by an epistemology in which meaning is perceived to develop independently of the actions, perceptions, and interpretations of individual practitioners. This worldview represents a movement informed by objectivism—'the belief that truth and meaning reside in objects independently of any consciousness' (Crotty 1998, p. 22)—and assumptions that stem from positivism and scientific notions of reality. A critique of positivism highlights the implications of adopting this theoretical framework in EBP implementation strategies. Positivism assumes the existence of four inviolable facts: 'monism' (human behaviour is essentially alike); 'elementarism' (behaviour can be understood through analysis of its elements); 'associationism' (complex behaviour has connected components); and, 'determinism' (behaviour is predicable, observable, sequential, and consistent) (Manis & Meltzer 1978, pp. 11–12). This implicit conceptualisation of how individuals act and react has resulted in the development of strategies for diffusion underpinned by assumptions that the same information can be distributed the same way and result in similar types of behaviour change. It has also led to a tendency to adopt linear strategies that equate conveyance of knowledge to a 'mechanical process of transfer in which knowledge is packaged and moved from one "place" to another, much as an appliance might be packaged and shipped' (National Centre for the Dissemination of Disability Research 1996, p.10). Importantly, it assumes a 'unidirectional, uncomplicated and linear flow from information creator to information user' (Lee & Garvin 2003, p. 451), and has resulted in an input/output view of implementation, characterised by single-focus strategies (such as didactic lectures, dissemination of written material, and educational workshops) that often fail to examine or accommodate the myriad of other influences that shape behaviour.

These implementation approaches mirror the essence of EBP where, through the mechanism of the RCT/systematic review (and their progeny, the clinical practice guideline), evidence is provided for single-issue treatments. This is despite the fact patient needs are rarely uni-dimensional[2] (Jordan & Jordan 2000; McDonald & Daly 2000; McDonald & Smith 2001; Taylor et al. 2001; Weller & Veale 1999).

[2] Uni-dimensional refers to focusing on only one specific aspect of an issue. In terms of treatment approaches, it assumes that individual patients coming to receive treatment only need support in regard to the presenting physical condition. It gives no regard to social, emotional or even other physical issues being encountered simultaneously by the patient.

The assessment of EBP as a positivist construct is revealed consistently in the literature, where it is presented as a paradigm that is intrinsically and unquestionably scientific (Cochrane 1971; Cullum & Cliska 1998; Dawes et al. 1999; Di Censo 1998; Muir Gray 1997; Oxman et al. 1993, 1994; Rosenberg & Donald 1995; Sackett et al. 1996; Stevens et al. 2001). Cochrane (1971, p. 25) paved the future path of the evidence-based movement when he identified the RCT as 'the most satisfactory [technique] despite its snags' for effective evaluation of health treatments. Mechanisms to support the model in practice, such as the NH&MRC evidence hierarchy and the classification of RCT as the 'gold standard' of evidence, highlight the dominance of science in conceptualising the paradigm.

This dominance is also highlighted by the movement to critique the fundamental positivism of EBP. Recent work (Ailinger 2003; Ashburner 2001; Dopson et al. 2003; Marks 2002; Ovretveit 2001; Pawson 2003; Walker 2003; Webb 2001) focuses specifically on limitations inherent in the positivism of EBP when considered against complex and diverse treatment areas, contexts, and fields of practice. The emergence of a countermovement specifically to address the limitations of positivism illustrates the dominance of this theoretical framework in shaping the paradigm.

The centrality of positivism in EBP is best highlighted in an analysis of the research literature into the effectiveness of interventions used to diffuse the paradigm. While the studies on discipline-based assessments of EBP (reviewed in chapter 2) are often shaped by both quantitative and qualitative methodologies, the work specific to assessment of the effectiveness of implementation interventions is predominantly quantitative in nature (Coleman & Nicholl 2001; Davis et al. 1995; Gupta, Ward & Hayward 1997; Mazza & Russell 2001; McAllister et al. 1999; NICS 2002; Retsas 2000).

This trend captures the essence of the evidence-based movement in health care; it is a paradigm informed, supported, monitored, and reviewed within theoretical and methodological frameworks that are fundamentally positivist in their orientation. The inter-relationships and inter-dependence of this dominant approach are shown in Figure 3, which depicts evidence in healthcare as predominantly scientific. This is a trend that reflects a 'concerted effort to systematically retrieve and synthesise data…intuition and individual clinical experience are de-emphasised and decision-making based on evidence is stressed' (Bauchner 1999, p. 1029). Further, the most common implementation mechanisms, such as guidelines, are informed by the epidemiological traditions of the dominant professions. This provides a legitimate strategy to maximise the validity allocated to particular evidence frameworks (Grol 1997) and, given the role of medicine in the evidence-based

movement, the traditions adopted have been predominantly scientific. Finally, the mechanisms to assess the effectiveness of implementation interventions often reflect the scientific paradigm through the use of such methods such as quantitative data collection and systematic reviews of intervention trials (Bero et al. 1998; Davis et al. 1995; Grimshaw & Russell 1993; Oxman et al. 1995; Thomas & Hargett 1999; Young & Ward 1999).

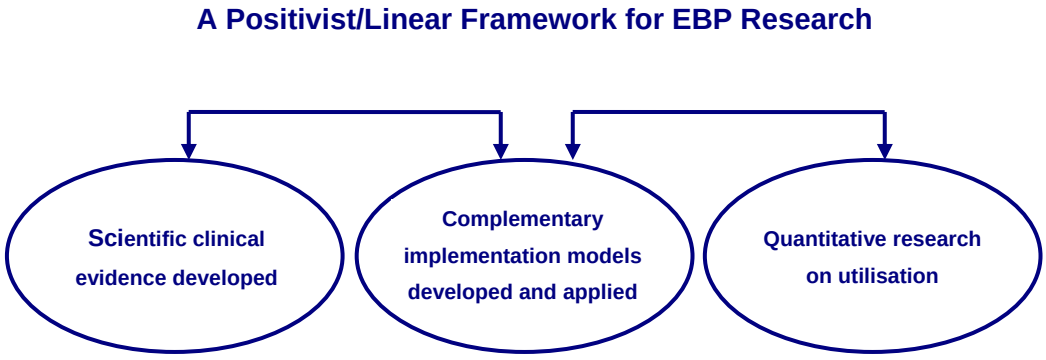

Figure 3: The Orthodox Process of Positivist Research Development and Implementation

Positivism is driven by science, observation, and measurability. The historical conceptualisation of the RCT was informed by this worldview and it was a philosophy maintained, once the transfer of scientific findings to practice commenced. However, when moving from a structured and controlled clinical research environment into a complex and often uncontrolled practice environment, conceptualisation needs to accommodate the variables introduced. The assumption that techniques applied in evidence development could be transferred successfully to informing research implementation interventions has been a shortcoming of the movement. Recent work has identified these shortcomings and the fact that 'further research is required to develop and validate a coherent theoretical framework for health professionals…and to estimate the efficiency of dissemination and implementation strategies in the presence of different barriers and effects modifiers' (Grimshaw et al. 2004, p. 5).

The limitations of the positivist methodology, and the linear implementation mechanisms it engenders, have been examined extensively in the literature, with recent work highlighting two decisive themes. In the first instance, critical analysis of the paradigm has emphasised the importance of confronting the prevailing framework that governs EBP and supplanting it with evidence from across the range of epistemological and theoretical traditions, if EBP is to have

relevance across diverse disciplines and practice arenas. There is a need for 'greater pluralism in attitudes to, and use of, different methods and the importance of qualitative research' to resource EBP (Popay, Rogers & Williams 1998, p. 350). This process has commenced through such initiatives as the Campbell Collaboration, and can be measured in the increase in support mechanisms for and research into discipline areas including social work (Cournoyer 2004; Gibbs 2003), occupational therapy (Welch 2002), and nursing (Angus, Hodnett & O'Brien-Pallas 2003). The second emergent theme, and the one driving the theoretical framework for this study, relates to the need to challenge the implicit epistemology and theory currently shaping the development and the assessment of interventions used to promote EBP. This is a requirement running parallel to the acknowledged need to realign evidence building and legitimisation to encompass epistemologies other than positivism, in order to reflect the diversity of disciplines and contexts.

The literature reveals a growing consensus that not only are there 'no magic bullets' (Oxman et al. 1995) tracing a straight line from evidence development to evidence implementation, there are not even any 'magic targets' (Dopson et al. 2002) to aim for when promoting the uptake of EBP. The literature review identified the complex issues of clinical autonomy, practice management, skill development, contextual relevance, organisation, and community and their impact on levels of adoption of EBP.

Against these influences, the capacity of single-focus, uni-directional[3] intervention strategies to be successful is questionable. The number of studies into the strengths of different intervention strategies is expanding (Ferlie & Shortell 2001; Nutley & Davies 2000; Nutley, Davis & Walter 2002; Walter, Nutley & Davies 2003a, 2003b) as it becomes clear that the positivist framework, and the resultant linear interventions with which it is resourced, has not achieved the early promise espoused by its proponents. Linear, single-strategy uptake models, such as information dissemination, continue to be examined and found wanting, while the body of knowledge promoting multi-directional[4], non-linear interventions, informed by alternative epistemologies, continues to grow (Dixon-Woods & Fitzpatrick 2001; Dopson et al. 2001, 2002; Dunning 2001; Eccles & Grimshaw 2004; Ferlie, Barton & Highton 1998; Ferlie, Wood & Fitzgerald 1999; Ferlie & Shortell 2001; Grimshaw & Eccles 2004; Sanson-Fisher 2004; Silagy 2001; Wye & McClenahan 2000).

[3] Uni-directional refers to strategies that assume a single and consistent strategy for dissemination and diffusion of knowledge rather than multiple strategies working simultaneously to achieve a specified result.
[4] Multi-directional refers to the use of multiple strategies working simultaneously to achieve a specified result.

Before moving into an examination of alternative theoretical frameworks for informing EBP, it is important, as a counterpoint, to undertake a detailed assessment of contemporary interventions, and the theory bases attributed to them by intervention analysts, thus illustrating the linear nature of the majority of established interventions. This is the first phase of the structured critique of theory that is the focus of this chapter.

3.1.2 A Typology of Interventions

Developing a typology of interventions for EBP is not new. A number of studies (Bero et al. 1998; Davies, Nutley & Smith 2000; Grimshaw & Russell 1993; Grol 1997; Halliday & Bero 2000; NICS 2001; Walter, Nutley & Davies 2003a, 2003b) have clustered uptake strategies into a series of intervention types and/or undertaken an analysis of their effectiveness. While the intent of each study was similar, the clustering varied, stemming from differences in the labels used in classification. These intervention classifications are outlined in Table 2.

Table 2: Existing classification typologies for EBP implementation interventions

Study	Classification Strategy
Bero et al. (1998)	Interventions clustered to effectiveness rankings across three categories: • Consistently effective interventions • Interventions of variable effectiveness • Interventions that have little or no effect
Davies, Nutley & Smith (2000)[+]	Grouped interventions based on frequency of use
Grimshaw & Russell (1993)	Classified according to effectiveness using a systematic review of the effects of clinical guidelines on medical practice
Grol (1997)	Clustered approaches under the subheadings of 'internal' and 'external' influences and considered the theories, foci and strategies that characterised each of the approaches examined.
Halliday and Bero (2000)	Assessed interventions using distinguishing features and level of complexity to cluster them into categories of: • Professionally based • Organisational • Systematic
NICS (Australia) (2001)	Adapted Grol's typology to create an intervention classification for existing research projects
Walter, Nutley & Davies (2003a, 2003b)	Applied an assessment of 'underlying mechanisms' to inform their taxonomy of interventions. The mechanisms chosen to cluster interventions were those of: • Research-based message embodied • Learning focus • Social influence • Communication • Motivation through reward • Reinforcement through information • Facilitation • Multiple intervention types. Inclusion of a particular intervention was determined by the extent to which a strategy used a chosen mechanism to achieve its goal.

[+]Informed by the work of the Cochrane Effective Practice & Organisation of Care Review Group (Ottawa).

The degree of variation between each of the classification systems meant that it was not possible to adopt a single taxonomy from one of the studies without excluding strategies and mechanisms identified by the others.

To accommodate this diversity, a modified classification system was developed. Based on the work of Bero et al. 1998; Davies, Nutley and Smith 2000; Grimshaw and Russell 1993; Grol 1997; Halliday and Bero 2000; NICS 2001; Walter, Nutley and Davies 2003a, 2003b, the most common themes have been synthesised to create a taxonomy of interventions for this research.

It is acknowledged that the decision to include interventions within a revised classification system has failed to accommodate the original criteria for classification of individual researchers. For example, Grol (1997) was driven by underpinning theory when developing his classification; Bero et al. (1998) by assessed levels of effectiveness and Walter, Nutley and Davies (2003a, 2003b) by mechanisms of influence. It is not possible, however, to accommodate such diverse criteria within a single classification structure; therefore, a simplified system was developed, based on strategy clustering. This adapted taxonomy, outlined in Table 3, represents the different strategies/interventions most commonly identified in the literature as promoting the implementation of EBP.

Beyond the classification process, extensive work was undertaken into assessing the effectiveness levels of different intervention types. It is important to note that, despite the focus on multi-disciplinary practice within this study, the majority of assessments of effectiveness available for analysis focus on uptake by single disciplines, in particular medicine (Coleman & Nicholl 2001; Gupta, Ward & Hayward 1997; Guyatt et al. 2000; Mayer & Piterman 1999; Mazza & Russell 2001; Taylor et al. 2001).

Table 3: Implementing EBP: Common intervention types

Intervention Types (incorporating different intervention classifications across identified typologies)	**Strategies clustered within this intervention**
Dissemination (Walter, Nutley & Davies 2003a, 2003b) • Epidemiological (Grol 1997) • Reinforcement (Walter, Nutley & Davies 2003a, 2003b) • Marketing (Grol 1997) • Professional (Davies, Nutley & Smith 2000)	• Reinforcement through information provision (Walter, Nutley & Davies 2003b) • Mass media and personal dissemination (Grol 1997) • Disseminating information through courses, mailings, journals (Grol 1997) • Evidence-based guideline development and distribution (Grol 1997)
Educational (Walter, Nutley & Davies 2003a, 2003b) • Social interaction (Grol 1997) • Dissemination (Walter, Nutley & Davies 2003a, 2003b) • Professional (Davies, Nutley & Smith 2000)	• Educational outreach visits (academic detailing) (Bero et al. 1998) • Interactive educational meetings, small group interaction (Bero et al. 1998; Grimshaw & Russell 1993; Grol 1997) • Outreach visits, individual instruction (Davies, Nutley & Smith 2000; Grol 1997) • Problem-based learning (Grol 1997) • Educational materials (Bero et al. 1998; Davies, Nutley & Smith 2000; Grimshaw & Russell 1993) • Didactic educational materials (Bero et al. 1998)
Coercion (Grol 1997) • Regulatory (Davies, Nutley & Smith 2000)	• Regulation(Davies, Nutley & Smith 2000; Grol 1997) • Law(Grol 1997) • Accreditation (Grol 1997)
Incentives (Walter, Nutley & Davies 2003a, 2003b) • Behavioural (Grol 1997) • Dissemination (Walter, Nutley & Davies 2003a, 2003b) • Financial (Davies, Nutley & Smith 2000)	• Economic incentives and sanctions (Grol 1997; Walter, Nutley & Davies 2003a, 2003b) • Provider and patient financial interventions (Davies, Nutley & Smith 2000)
Organisational (Grol 1997; Davies, Nutley & Smith 2000) • Facilitation (Walter, Nutley & Davies 2003a, 2003b) • Behavioural (Grol 1997) • Dissemination (Walter, Nutley & Davies 2003a, 2003b) • Professional (Davies, Nutley & Smith 2000) • Structural (Davies, Nutley & Smith 2000) • Patient-oriented (Davies, Nutley & Smith 2000)	• Re-engineering care process (Grol 1997) • Needs assessment – adapting changes to local need ((Grol 1997) • Quality improvement approaches (Davies, Nutley & Smith 2000; Grol 1997) • Team building (Davies et al.2000; Grol 1997) • Enhancing leadership (Grol 1997) • Changing structures and work task allocation (Davies, Nutley & Smith 2000; Grol 1997) • Audit and feedback (Bero et al. 1998; Davies, Nutley & Smith 2000; Grol 1997) • Reminder/monitoring systems (manual/computer) (Bero et al. 1998; Grol 1997)
Social Interaction (Grol, 1997) • Collaboration (Walter, Nutley & Davies 2003a, 2003b) • Dissemination (Walter, Nutley & Davies 2003a, 2003b) • Social Influence (Walter, Nutley & Davies 2003a, 2003b) • Professional (Davies, Nutley & Smith 2000)	• Peer review (Grol 1997) • Opinion leaders (Bero et al. 1998; Davies, Nutley & Smith 2000; Grol 1997; Walter, Nutley & Davies 2003a, 2003b) • Patient mediated interventions (Bero et al. 1998; Grol 1997) • Influencing people within social networks (Grol 1997) • Local consensus process (Bero et al.1998; Davies, Nutley & Smith 2000) • Collaboration between researchers and users (Walter, Nutley & Davies 2003a, 2003b)

Acknowledging this limitation, the following subsection examines each of the interventions outlined in Table 3 against the available literature pool to review key strategies and their assessed level of effectiveness. This process is foundational in moving from the linear model depicted in Figure 3 to a new conceptualisation of EBP as a complex and multi-directional paradigm in which evidence development, intervention strategies, and uptake are better understood through the explicit use of theory. The section highlights the extent to which linear strategies have dominated implementation processes and maps the movement toward the development of more complex and multi-directional implementation types.

3.1.3 Linear Intervention Types

Dissemination

There is a large body of work on the use of dissemination for promoting the use of EBP (Bauchner 1999; Bero et al. 1998; Davis et al. 1992, 1995; Grol 1997; Kitson 1997; Melnyk et al. 2000; McDonald 2001; Nutley, Percy-Smith & Solesbury 2003; Silagy & Haines 1998; Thomas et al. 2001; Walter, Nutley & Davies 2003a, 2003b). In parallel with the scope and diversity of these studies is a level of definitional blurring across studies around what rates as a dissemination strategy. This is particularly notable concerning the distinctions made between passive and active dissemination strategies (Grol 1997; Walter, Nutley & Davies 2003a).

Dissemination strategies clustered within the intervention taxonomy developed for this study (Table 3) are all passive. They all involve the distribution of research findings through one-way information provision requiring limited interaction with information recipients. The information distributed is generally research or research-related material such as clinical practice guidelines and print publications (Walter, Nutley & Davies 2003a) but can also include dissemination through marketing and media or amongst colleagues. Dissemination is underpinned by an implicit assumption that the provision of knowledge, in itself, is sufficient to alter practice. This is linked to traditional notions of professionalism, supported by a ‘belief that new knowledge changes behaviour’ (Marteau, Sowden & Armstrong 1998, p. 37).

Despite this view, research on passive dissemination shows that this strategy has had limited impact on altering practitioners’ behaviour in the promotion/adoption of EBP (Atheron 2000; Bauchner 1999; Bero et al. 1998; Coleman & Nicholl 2001; Curry 2000; Ferlie & Shortell 2001; Greco & Eisenberg 1993). In an analysis of practice models and literature on interventions effectiveness, Nutley, Percy-Smith and Solesbury (2003) consolidated research across the health, education, and

welfare sector and found, consistently, that while passive dissemination of research findings, used alone, helped raise awareness of issues, it was unlikely to change individual practitioner behaviour. In the literature review component of that same study, Walter, Nutley & Davies (2003a, p.13) identified that passive dissemination had limited impact on increased adoption of EBP due to such contextual issues as limited access to research; time constraints; and practitioner skill deficits in research interpretation and application. (These same barriers are also identified consistently [Cabana et al. 1999; McAllister et al. 1999; McMurray 1998; Taylor et al. 2002] in the literature review in chapter 2). These findings reinforce the limitations of positivist linear models of knowledge diffusion, which, despite consistent research findings of the failure of passive dissemination strategies to support EBP implementation, remain the dominant mechanism used to foster implementation of the paradigm. As identified by Bero et al. (1998, p. 467), 'passive approaches probably represent the most common approaches adopted by researchers, professional bodies and healthcare associations'.

Educational

Educational strategies are multi-faceted and include workshops, distribution of educational materials, interactive training, and academic detailing. The success of educational strategies was consistently found to be linked to whether the strategy involved information provision (a passive educational technique) or interactive practices (an active educational technique).

Passive educational techniques—such as the provision of written educational materials and non-interactive training modalities—have been found to have limited capacity, on their own, to change practitioner uptake of EBP (Allery, Owen & Robling 1997; Bero et al. 1998; Davis et al. 1995; Greco & Eisenberg 1993; Grimshaw & Russell 1993; Grol 1997; Haines & Jones 1994; Lomas et al. 1991; McDonald 2001; Melnyk et al, 2000; Silagy & Haines 1998; Thomas et al. 1999; Thomson O'Brien et al. 2004a; Walter, Nutley & Davies 2003a, 2003b).

Active educational techniques (often classified as 'active dissemination') include a variety of interactive education approaches. The strategies found to be most effective have been interactive educational workshops and small group activities (Bero et al. 1998; Grimshaw & Russell 1993; Grol 1997; Nutley, Percy-Smith & Solesbury 2003; Thomas et al. 1999; Thomson O'Brien et al. 2004b); problem-based learning techniques (Grol 1997); and educational outreach visits[5] and/or the

[5] It is interesting to note that the most recent Cochrane Review on educational outreach visits (Thomson O'Brien et al. 2004b), while finding this to be a promising intervention, also found that effectiveness

provision of academic detailing support (Bauchner 1999; Bero et al. 1998; Davis et al. 1995; Greco & Eisenberg 1993; Grimshaw & Russell 1993; Grol 1997; Silagy & Haines 1998; Taylor et al. 2002).

Despite the growing knowledge base highlighting the limitations of passive education in increasing EBP uptake, conventional didactic training strategies remain the norm across discipline areas (Bero et al. 1998; Howard, McMillen & Pollio 2003; Nilsson Kajermo et al. 2000). Studies into rural practice show that, despite acknowledgement that interactive educational techniques are superior in the promoting and supporting of EBP adoption, issues of geographic isolation mean that passive educational techniques dominate. Taylor et al. (2001, 2002) identified the difficulties rural medical practitioners experience in accessing practical workshops, academic detailing, or continuing education. From a theoretical perspective, passive education techniques continue to construct learning as a linear, one-way sharing of information. Active educational techniques represent a shift in conceptualising knowledge sharing although, as detailed in section 3.1.5, the explicit application of theory as a mechanism to explain this process remains underdeveloped. Further, the use of a single strategy continues to disregard the myriad of professional, contextual, and organisational issues influencing the adoption of EBP.

Coercion

The use of coercive strategies removes the assumption that practitioners will initiate change through internal motivations for improved professional practice. Coercion seeks to obtain results through conformity to established and enforceable rules. Coercive strategies, categorised by the available literature to include regulations, policies, and/or legislation, act as mechanisms to exert pressure and control on practitioners to bring about behaviour change (Grol 1997). These strategies can be imposed at the industry, sector, organisational, team, and/or discipline level.

Greco and Eisenberg (1993) identified the potential for coercive strategies, linked to penalties for non-compliance, to change practitioners' behaviour and increase the uptake of EBP. However, beyond this study, there is limited research examining coercion as a strategy for increasing uptake of EBP, and, according to Grol (1997, p. 420) 'research evidence for this approach is meagre and not straightforward', which makes assessment of this strategy difficult.

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knowledge was limited to prescribing and that more research was needed to clarify the effectiveness of this intervention in terms of other aspects of practice and cost effectiveness.

Acknowledging this limitation, an examination of the current worldwide policy agenda on EBP provides some insights into coercion, but does little to increase available knowledge about its effectiveness. Mandatory accreditation requirements for acute health facilities (Haynes 2003) and the introduction of regulatory mechanisms such as clinical governance (King & Wilson 2000) provide examples of strategies that carry funding and registration penalties for non-compliance. Considered within this context, coercion can be seen to form an integral part of the evidence-based implementation agenda, although the comparative effectiveness of this intervention within the context of other strategies remains unclear. Theoretically, it maintains the uni-directional and linear conceptualisation of processes for behaviour change.

Incentives

The use of incentives essentially involves the provision of inducements (generally economic) to encourage practitioners to adopt EBP. The capacity to analyse the effectiveness of this intervention for multi-disciplinary practice is limited due to the current scarcity of incentive schemes for professions other than medicine. Very little work has been undertaken on how financial incentives, or other reward schemes, shape the uptake of EBP by professions other than medicine. While the importance of incentives to medicine has been well documented, the empirical evidence on the impact of incentives in bringing about sustained changes in practice generally remains limited. Weller and Veale (1999) argue that financial incentives are critical to support the adoption of EBP, but do not evaluate the success of incentives in promoting the uptake of EBP. Greco and Eisenberg (1993), Guyatt et al. (2000), Lomas et al. (1989), Palmer and Fenner (1999), and Smith (2000) all argue that incentives can be an effective intervention in initiating practice changes and increasing uptake of EBP, but provide few insights into whether they alter long-term practice. As précised by Walter, Nutley and Davies (2003a, p.20) ‘lack of evidence makes it difficult to draw firm conclusions about the use of these kinds of interventions’. It remains unclear whether incentives provide the initial trigger for sustained changes, or whether sustained practice change remains dependent on an ongoing process of incentive payments.

The interventions examined to date have been, in the main, underpinned by linear views of the implementation process. Despite being assessed as having limited success in bringing about behaviour change, strategies such as passive dissemination and passive education remain the dominant interventions used in the health service sector to promote implementation of EBP. While interactive education strategies are identified as achieving some levels of success, these strategies move away from input/output notions of conceptualising knowledge development to an interactive

process of two-way communication—an important distinction in the examination of theoretical frameworks informing the intervention (Lee & Garvin 2003).

The following section examines interventions that continue the tradition of moving away from the linear/positivist framework in order to assess their success as an alternative way of conceptualising implementation of EBP.

3.1.4 Shifting from the Linear to the Interpretivist

Organisational

The literature on organisational interventions and their impact on increasing the uptake of EBP is extensive. The organisational context has consistently been identified as a critical, yet often overlooked, framework for bringing about sustainable change in relation to EBP (Ashburner 2001; Cockburn 2004; Ferlie et al. 2001; Stetler 2003).

The strategies within this classification cluster are multi-directional, and include changing workforce structures and roles to enhance EBP (Grol 1997); local customisation of existing guidelines (Grol 1997); establishing formal quality programs (Sheldon, Guyatt & Haines 1998); providing technological and work team support (Walter, Nutley & Davies 2003a); audit and feedback (Silagy & Haines 1998); and using reminders and prompts (Guyatt et al. 2000).

Strategies chosen for inclusion within this cluster had, as their point of commonality, the centrality of the organisation in supporting implementation of EBP. Within this classification, organisational strategies fall into one of two streams: those occurring within and sponsored by the organisation but remaining focused on individual practitioners; and those underpinned by a modification to the organisational environment to encourage behaviour change by individuals. While there is some overlap of these two streams, they are distinguished by their principal area of focus—individual practitioner (as part of the organisation) or the organisation (and, through this, the individual practitioner). The ‘individual within the organisation’ stream includes strategies implemented organisationally, but not solely dependent on an organisational infrastructure being applied. Examples of these strategies are ‘reminders and prompts’ and ‘audit and feedback’, which can be applied to individual practitioners working within an organisation, regardless of what is happening across the rest of the organisation. Additionally, these strategies are not exclusively organisational interventions because they are applied as well to independent practitioners who are not part of a structured organisation. However, as the use of reminder, audit, and feedback are consistently

included in studies focusing on organisational strategies for practice change, they have been included within this intervention cluster (Bero et al. 1998).

Stream 1: Linear strategies for the individual practitioner as part of the organisation

Reminders are a decision support mechanism involving provision of manual and/or computerised prompts. They involve one-way information provision, but are more specific in their intent than simple information dissemination. Reminding/prompting practitioners to adopt particular treatments, at particular times, on specific conditions, represents a tailored and customised strategy to engage practitioners actively in the use of evidence. These strategies are generally found to be effective (Bero et al. 1998; Guyatt et al. 2000; Silagy & Haines 1998; Walter, Nutley & Davies 2003a; Wensing & Grol 1994), although Bero et al. (1998, p. 466) identifies that successes are contained to 'decisions on drug doses, the provision of preventative care, and general clinical management of patients, but not in diagnosis'. There is no conclusive evidence whether the strategy leads to sustained changes in practitioner behaviour once the prompts are removed.

The provision of decision-support through reminders is sometimes clustered, within available literature, with the strategies of audit and feedback, although the intent of the strategies varies significantly. Audit and feedback is, in essence, a summary of clinical performance (Bero et al. (1998) and is much more regulatory than reminders/prompts.

Studies on the effectiveness of audit and feedback provide variable results. The works of Bauchner 1999; Bero et al. 1998; Del Mar and Mitchell 2004; Greco and Eisenberg 1993; Guyatt et al. 2000; Haines and Jones 1994; Lipman 2000; and Silagy and Haines 1998 consistently identify that audit and feedback produce greater utilisation of evidence. In contrast, Smith (2000), in a systematic review of interventions, found audit and feedback strategies are minimally effective in achieving practice changes, while Palmer and Fenner (1996) found feedback to be potentially effective, but identified variable results with the level of efficacy increasing if feedback was able to be related to specific patients, or was received when a critical treatment decision was being made. The recent Cochrane Review on audit and feedback (Jamtvedt et al. 2004) found the strategy can be effective but that its impact is small to moderate.

The final organisational strategy within this stream is the provision of technological support. This strategy assumes that the availability of online decision support redresses a key barrier to uptake of EBP: access to evidence (Morris 1999; Royle & Blythe 1998; Taylor et al. 2001, 2002; Walter, Nutley & Davies 2003a). Interestingly, the majority of literature focuses on a lack of access to

technology as a major barrier to the adoption of EBP (Morris 1999; Royle & Blythe 1998; Retsas 2000; Taylor et al. 2001, 2002). Very little evaluative work has analysed the effectiveness of technology in increasing levels of uptake of EBP.

Stream 2: Non-linear strategies for the organisation (and the individual practitioner)

The strategies included within this stream are often complex and multi-directional. They include local customisation of available evidence (Bero et al. 1998; Ferlie et al. 2001; Grol 1997; Lomas et al. 1991); the introduction of quality improvement approaches (Grol 1997; Sheldon, Guyatt & Haines 1998); team-building strategies linked to EBP (Dickey, Gemson & Carney 1999; Grol 1997; Walter, Nutley & Davies 2003a); strong and supportive organisational leadership (Grol 1997; Heller & Arozullah 2001; Walter, Nutley & Davies 2003a); and the redistribution of work structures and work task allocation to accommodate/support the implementation of EBP (Grol 1997; Heller & Arozullah 2001).

The work on organisationally based interventions is still emerging (Ashburner 2001; Ashford et al. 1999; Ferlie et al. 2001; Ferlie & Shortell 2001; Sweet 2004) and definitive conclusions are difficult at this stage. It is acknowledged that the complex nature of organisations can create rather than diminish barriers to change. Successful implementation can be hampered as different groups work to overcome the traditional barriers, cultures, and motivators that exist between health disciplines and administrative managers (Ferlie et al. 2001; Ferlie & Shortell 2001). Acknowledging this, the emerging evidence on the effectiveness of individual strategies within this stream does indicate that coordinated, resourced, and supported approaches are often effective in promoting the adoption of EBP. Time constraints, limited resources, and infrastructure, as well as intra- and inter-disciplinary differences can be approached in a targeted and coordinated way within an organisational agenda for change. The complex nature of organisations often means changes are multi-dimensional (involving managerial, administrative, and clinical staff) and multi-faceted (involving the simultaneous introduction of a variety of interventions). This approach has been found consistently to be most effective in achieving increased use of EBP (Bero et al. 1998; Curry 2000; Greco & Eisenberg 1993; Ferlie & Shortell 2001; Walter, Nutley & Davies 2003a, 2003b).

This stream of organisational interventions, above all others critiqued to date, moves away from the uni-directional and linear interventions that have historically characterised the evidence-based movement, with evidence indicating increased overall effectiveness (Bero et al. 1998; Curry 2000; Dickey, Gemson & Carney 1999; Ferlie et al. 2001; Grol 1997; Greco & Eisenberg 1993; Heller &

Arozullah 2001; Lomas et al. 1991; Shortell, Guyatt & Haines 1998; Silagy & Haines 1998; Walter, Nutley & Davies 2003a).

Social interaction

Social interaction is the final intervention within the taxonomy developed for this study. Inclusion within this cluster was determined by the extent to which strategies involved the use of social interaction to bring about change. Social interaction can occur individually, within and between disciplines, across the organisation or the service system. This intervention, in line with the stream 2 component of the organisational intervention cluster, involves interactive—often multi-directional—strategies. Recent studies on uptake of EBP (in particular, those highlighting the importance of moving outside the linear and uni-directional focus characteristic of traditional implementation interventions) consistently identify the importance of social interaction strategies in achieving change (Dopson et al. 2002; Ferlie et al. 2001).

The key strategies included in this intervention are:

- Peer review/information sharing with peers. This strategy is also referred to as a social influence/ social network strategy (Grol 1997; Mittman, Tonesk & Jacobson 1992; Nutley & Davis 2000; Putnam et al. 2002) and centres on the impact of professional and social relationships in influencing change. Research into this intervention is extensive, with Bauchner (1999), Ferlie et al. (2001), Grol (1997), Jamtvedt et al. (2004) documenting the importance of peer review/information sharing in achieving behaviour change. As articulated by Grol (1997, p. 419), individual practitioners ‘constantly look to each other for support, approval, role models, information and feedback’. Not surprisingly, this strategy also has the potential to decrease uptake when peers and/or supervisors seek to undermine the adoption of the EBP (Newman, Papadopoulos & Melifonwu 2000; Retsas 2000).

- Opinion leaders. The influence of opinion leaders on EBP has been examined extensively and rigorously throughout the literature. Walter, Nutley and Davies (2003a) and Thomson O’Brien et al. (2004c) found mixed results on this strategy’s effectiveness . A lack of clarity remains around what specifically makes the use of an opinion leader a successful (or unsuccessful) strategy. This makes replication of successful techniques difficult—the Thomson et al. study recommended that further research be undertaken to clarify the conditions for change. Conceding these mixed results, Walter, Nutley and Davies (2003a, p.17) also acknowledge that non-systematic program evaluations consistently show the use of

opinion leaders to be successful, and this concurs with the vast majority of available evidence promoting opinion leaders as pivotal to successful implementation of EBP (Bauchner 1999; Bero et al. 1998; Dopson et al. 2002; Ferlie et al. 2001; Greco & Eisenberg 1993; Grol 1997; Guyatt et al. 2000; Lomas et al. 1991; Phillips, Rubin & Morey 2000; Silagy & Haines 1998). Less consistently examined but equally important is the fact that opinion leaders, like peer influencers, have the capacity to restrict uptake if the chosen opinion leader does not see the value of EBP (Ferlie et al. 2001).

- Patient-mediated interactions. This involves the provision of evidence to patients to facilitate their involvement in treatment decision-making. Available data on this intervention is less extensive, but consistently shows this strategy to be effective in increasing the use of EBP (Bero et al. 1998; Davis 1998; Grol 1997; Silagy & Haines 1998). The systemic commitment to increasing patient input into treatment decisions is found in initiatives such as the Cochrane Collaboration Consumer database, the Ottawa Health Research Institute Patient Decision Aids Project, and the growing availability of online resources to increase patient knowledge. Despite these initiatives, evidence on the extent to which this strategy is being implemented across the health sector remains limited. The literature review identifies a continued resistance by health practitioners, particularly medicine, to ceding authority and autonomy to others (whether it be government, management, other professions, or the patient) (Adams 2001; Armstrong 2002; McDonald & Daly 2000; Morreim 2002; Ritzer & Walczak 1988; Sullivan 2000). This view is likely to impact on adoption of this effective intervention.

- Local consensus. Resistance to EBP has been linked to perceptions that available evidence lacks applicability to the local practice context (Jordan & Jordan, 2000; McDonald 2001; Putnam et al. 2002; Weller & Veale 1999). Local consensus processes provide a mechanism to address these concerns and lead to an increase in adoption of EBP. Available evidence shows that local consensus, involving a multi-directional process of working across teams and disciplines to modify available evidence in line with local need, is a consistently successful implementation strategy (Bero et al.1998; Haines & Jones 1994; Lomas et al.1991; Mayer & Piterman1999; Silagy & Haines 1998).

- Collaboration between researchers and users. Evidence on the effectiveness of this strategy in the health service arena is limited, although the work of Howard and Jenson (1999), Reid and Zettergren (2000), Shaw (1997), and Walter, Nutley and Davies (2003a) signals the

importance of improving the collaboration between researchers and practitioners to enhance and promote the use of evidence in practice. Ferlie et al. (2001, p. 101), take this further and discuss the notion of hybrid researcher-practitioner roles to overcome the barriers created by the current reliance on, and resistance to, external experts. Despite these findings, evidence about the effectiveness of this strategy in increasing uptake of EBP remains limited.

Multifaceted interventions

While the recent systematic review of 235 evaluations of implementation strategies by Grimshaw and Eccles (2004, p. 2) found that 'multifaceted interventions did not appear to be more effective than single interventions', there is a large body of literature that counters this assessment. The vast majority of studies have found multiple implementation strategies are more likely to be successful in promoting uptake of EBP than single strategies (Bero et al. 1998; Curry 2000; Greco & Eisenberg 1993; O'Brien 2001; Walter, Nutley & Davies 2003a; Walter, Nutley & Davies 2003b). Acknowledging these findings, the literature review by Walter, Nutley and Davies (2003a) does not locate any studies that test, in any robust way, the reasons why multifaceted interventions are successful. It remains open to discussion whether the use of multifaceted strategies are successful because of the type of strategies that are combined at any given time or whether better outcomes are due to the 'additive effect' of using more than one strategy simultaneously, regardless of the strategies used (p.25). Dopson et al. (2001) provide valuable insights on the use of interactive and multifaceted strategies in their multi-site (16 sites) evaluation of a national clinical effectiveness improvement program. They found not only that multi-faceted approaches are more successful, but that the most effective interventions are those involving interactive and complex strategies (such as the organisational (Stream 2) and social interaction interventions discussed previously in this chapter). The Dopson et al. study advocates moving away from the linear implementation strategies that have characterised the evidence-based movement.

In essence, this critique reinforces that the application of single strategies—particularly strategies such as dissemination and passive educational techniques—assume a linear relationship between the strategy (the input) and the uptake of EBP (the output). This input/output relationship is depicted in Figure 4 and mirrors the linear process of research development and implementation previously depicted in Figure 3—a simplistic mechanism with limited capacity to accommodate and address the complex factors that impact on uptake of EBP at the individual, disciplinary, organisational, sector and community level.

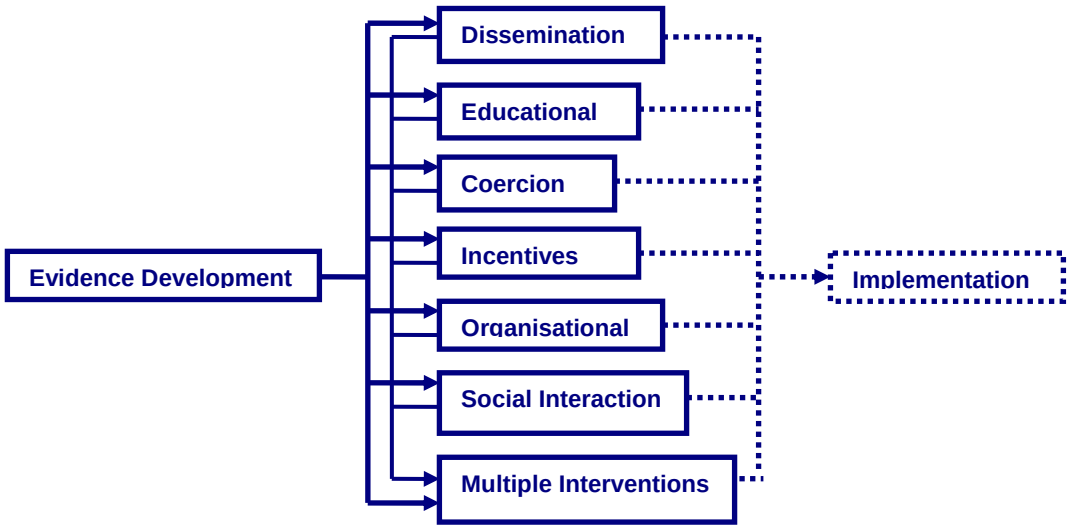

Figure 4: The Practical Application of Diverse Theory Interventions: Linear Models of Intervention for Uptake of EBP

To grasp fully the extent to which this input/output notion of implementation has been intrinsic in the development of strategies for uptake of EBP, it is necessary, as the next phase of this analysis, to examine the theories that have been purported to drive EBP interventions.

3.1.5 Implicit Theory and EBP

The growing awareness that research utilisation levels remain less than optimum has resulted in a burgeoning movement to understand not only the strategies most likely to be successful in promoting uptake of EBP, but also the theories and methodologies that shape these strategies. Theory provides a mechanism to better understand complex issues and their impacts. As identified by Willis (1990) and Crotty (1998), it provides the scaffolding to support the ideas being explored and the approaches subsequently developed and adopted. In a more contemporary and relevant publication, Nutley, Walter and Davies (2002, p. 9) identify the centrality of theory in serving 'to construct the research utilisation/evidence based practice implementation 'problem' in a particular way'. In addition, the work of the UK Medical Research Council (2000, p. 3) reinforced the hereto undervalued role of theory when it established a five-phase process for development and evaluation of complex interventions, and identified that phase one must be to 'explore relevant theory to ensure best choice of intervention and hypothesis and to predict major confounders and strategic design

issues'. While this model failed to define what was meant by 'theory' and, as identified by Bonner (2003, p. 82), operated from a perspective in which 'the underlying logic and assumptions of the positivist paradigm remain intact', it nonetheless represented a formalised recognition of the need for the explicit adoption of theoretical perspectives in relation to EBP.

Despite this emerging drive for theoretical conceptualisation of interventions, Grimshaw and Eccles's 2004 (p.S50) systematic review of dissemination and implementation strategies found 'there was little evidence that investigators had developed a theoretical model to guide their choice of intervention'. This remains problematic, although some inroads have been made. Grol's 1997 reflective exercise on strategies for changing clinical practice is an example of the preliminary classification of interventions along theoretical and epistemological lines. This initial paper has been followed by other studies examining the theory/practice link, although much of this work focuses on applying established theories (often from diverse fields of practice) to a complex and emerging paradigm rather than on the development of new theoretical frameworks to inform the implementation of EBP. Further, as identified by Nutley et al. (2002, p. 8), much of this work is underpinned by a tendency to use theory implicitly. In such cases, interventions fail to overtly examine the existing theoretical frameworks being drawn upon (for example organisational management theory) and simply assume a capacity to employ existing knowledge and conceptualisations to EBP. While the movement to explicitly adopt specific theory for conceptualising EBP is strengthening,[6] the building of theory specific to EBP remains underdeveloped (Bonner 2003; McDonald 2001).

Of particular interest is the work of Marteau, Sowden and Armstrong[7] (1998, p.39) who found, in an analysis of 54 studies into research implementation, that only two studies made any specific and explicit reference to theory. This atheoretical approach results in a conceptualisation of the 'process of research implementation' (Nutley, Walter & Davies 2002, p. 5) that remains embedded in assumptions around theory transferability and applicability that are both untested, and increasingly questioned (Dopson et al. 2002; Ferlie, Wood & Fitzgerald 1999; Ferlie et al. 2001; Nutley, Walter & Davies 2002).

[6] See, for example, the works of Dopson et al. (2002) and their analysis of the application of Diffusion of Innovation theory to EBP, and the work of Kitson, Harvey and McCormack (1998) and their multi-directional model using the equation SI=f (E,C,F) to examine the relationship between successful implementation and evidence, context, and facilitation.

[7] This finding was reconfirmed in the 2002 revised edition of this book.

Given this vacuum, the Walter, Nutley and Davies (2003a) literature review on research utilisation provides a valuable resource on the existing status of theory in EBP. Sixty percent of the literature examined in this study is specific to the health sector and a further fourteen percent focuses on social care, which, in the multi-disciplinary sub-acute context, remains an integral aspect of service delivery. Consequently, this work is pivotal in assessing the link between research utilisation and theory, and, as an extensive review, represents an advance on Grol's reflective writings.

The classification undertaken by Grol and by Walter, Nutley and Davies has since been applied to the taxonomy of interventions adapted for this study (as summarised in Table 3). Before moving on to analyse these theories, it is important to highlight some concerns relating to the process used by Grol and by Walter, Nutley and Davies in theory classification. While the works are notable in that they involve the assignation of theory to intervention type, they lack robust assessment of rationales for the application of those theories. For example, while Walter, Nutley and Davies (2003a) identify the theory of reflective practice (Schön 1983) to be a framework driving the intervention of 'increased collaboration between researchers and users', limited evidence or explanation is provided to justify this link. The writers briefly refer (p. 20) to the fact that Schön's theory explains the process of learning through 'reviewing, analysis and evaluating practice' and apply this general notion of learning through reflection to a specific intervention type. An examination of Schön's work on reflective practice identifies his belief that the practitioner must consider their experiences within the framework provided by other professionals and his rejection of the notion that professional development is limited to a rational and technically focused developmental framework. While this supports Walter, Nutley and Davies' decision to include Schön's theory as a mechanism through which to understand the importance of researcher/user collaboration for professional development, the theory/practice analysis is superficial at best. No work was found that used Schön's reflective theory explicitly as the conceptual framework against which to specifically test interventions and build strategies to increase levels of uptake of EBP. The process of formally testing a theory is fundamental to cement the theory/practice relationship and argue, effectively, the validity of applying one theoretical framework over another. This process does not occur within the works of either Grol (1997) or Walter, Nutley and Davies (2003a). Their use of theory to conceptualise the development and subsequent effectiveness of key interventions lacks this empirical rigor, and the inclusion of theory, in the main, is based on the notion of the generalisability of theoretical findings rather than on specific theory application and testing. As a result, the information contained in Table 4 must be viewed as generally untested within the context of EBP.

Table 4: Theories asserted to underpin key interventions

Intervention	Theories linked within literature to this intervention
Dissemination	• Adult learning theories (Walter, Nutley & Davies 2003a, 2003b) • Cognitive theories (Grol 1997; Walter, Nutley & Davies 2003a, 2003b) • Health promotion, innovation, and social learning theories (Grol 1997)
Educational	• Adult learning theories (Grol 1997) • Learning theory (Grol 1997)
Coercion	• Economic, power, and learning theories (Grol 1997 ; Walter, Nutley & Davies 2003a, 2003b) • Learning theories (Walter, Nutley & Davies 2003a, 2003b)
Incentives	• Economic, power, and learning theories (Grol 1997)
Organisational	• Management theories, systems theories (Grol 1997) • Change management theories (Walter, Nutley & Davies 2003a, 2003b) • Learning theories (Walter, Nutley & Davies 2003a, 2003b)
Social Interaction	• Social learning and diffusion of innovation theory (Grol 1997; Walter, Nutley & Davies 2003a, 2003b) • Social influence/power theories (Grol 1997;Walter, Nutley & Davies 2003a, 2003b) • Constructionist theories of learning (Walter, Nutley & Davies 2003a, 2003b) • Theories of reflective practice (Walter, Nutley & Davies 2003a, 2003b)

An examination of Table 4 shows a degree of diversity in the theoretical frameworks purported to inform the interventions driving contemporary research utilisation. There are those frameworks that are clearly closely aligned to the positivist theoretical tradition and are uni-directional and rational in their orientation. The cognitive theories that underpin elements of the 'Dissemination' and 'Educational' interventions are representative of this type of alignment. Cognitive theories of education are often dialectical and prescriptive in nature and operate as a structured way to achieve set learning goals and outcomes. Collin's & Steven's (1983) cognitive theory of inquiry teaching is an example of this type of theory.

The interventions of 'coercion' and 'incentives', despite being underpinned by power theories (which, within an organisational and social structure are often multifaceted in nature) are also linear. They assume a measurable relationship between management/government/work unit actions and practitioners' reactions. The specific power bases identified by French and Raven (1959) as shaping the professional practice situation (i.e., legitimate, reward, coercive, expert, referent) and

the work of Lipman (2000) on physical, resource, position, expert, personal, and negative power provide a structured classification system, the most overt elements of which can be applied to the linear notion of using incentives and/or coercion to bring about rational change.

Conversely, there are those theories characterised by notions of social learning and constructionist theory that are more often multi-directional in their orientation. The interventions of 'Social Interaction' and 'Organisational' as well as components of 'Dissemination' and 'Educational' interventions are located within this cluster, albeit to varying degrees. The adult learning theories identified by Grol (1997) and Walter, Nutley and Davies (2003a) as underpinning dissemination and educational interventions are clearly representative of interventions that have the capacity to be either uni- or multi-directional. The literature fails to distinguish between different types of adult learning theories and assumes a level of universality that does not reflect the nature of these theories. While Knowles (1975) identifies adult learning 'principles' and classifies the adult learner as autonomous and self directed, goal-oriented, informed by life experience, practical, and needing relevancy in the learning experience, adult learning theories are more complex and quite diverse. Analysis of adult learning theory depicts a variety of orientations spanning behavioural, cognitive, humanist, and social domains. Importantly, these theories evolved from diverse epistemological and theoretical origins and represent fundamentally diverse worldviews. The allocation of a common label of 'adult learning theories', as a singular theoretical framework, effectively illustrates the extent to which assumptions have been made about the generalisability of theory. Examples of adult learning theories aligned to a positivist (linear/rationale) epistemological tradition are:

- Gagne's (1985) Conditions of Learning Theory, which classifies learning into different types (verbal information, intellectual skills, cognitive strategies, motor skills, and attitudes) and cognitive processes (reception, expectancy, retrieval, selective perceptions, semantic encoding, responding, reinforcement, retrieval, and generalisation); and,

- Sweller's (1988) Cognitive Load Theory, which is also underpinned by cognitive notions of learning, and promotes learning as linked to the human cognitive architecture and measured through the processes of research.

Examples of adult learning theories aligned to a constructionist (often multifaceted and non-prescriptive) epistemological tradition are:

- Knowle's (1984) theory of Andragogy, which holds that self-direction and control over decision-making is fundamental to effective learning; and,

- Bruner's (1996) Constructivist Theory, which promotes learning as an active process that involves the construction of ideas based on participant interpretation of events. It includes practical, social and cultural aspects of learning.

The clustering of social learning and influence theories under a common label is a further example of the implicit and uncritical use of diverse theories as conceptual frameworks to support implementation of EBP. Social learning and influence, like adult learning theories, encompass a variety of different approaches that span cognitive and sociobehavioural frameworks. To uniformly cluster Bandura's (1977) work on modelling, motivation, and self regulation (renamed Social Cognitive Theory in 1986) with the diverse conceptualisations that have developed to inform the adoption of innovation across a variety of fields of practice (Colyer & Kamath 1999; Curry 2000; Damanpour 1991; Rogers 1995; Wolfe 1994) highlights the extent to which implicit theory has been used to shape EBP implementations.

The contemporary application of theory to EBP comprises two types, as depicted in Figure 5. In Type A processes, evidence is developed (generally shaped by scientific/positivist traditions) and dispersed through the range of orthodox implementation interventions. Theory is not a considered aspect of the distribution process and any reference to theoretical frameworks is linked to the nature of the evidence rather than the intervention. Type B processes reflect an emerging movement to apply a theoretical framework to implementation interventions but are focused, as Nutley, Davies and Walter (2002b, p.16) identified, on the application of ideas to 'conduct *post hoc* analyses of initiatives to increase research utilisation' rather than explicitly applying theory to make sense of the paradigm within the practice context.

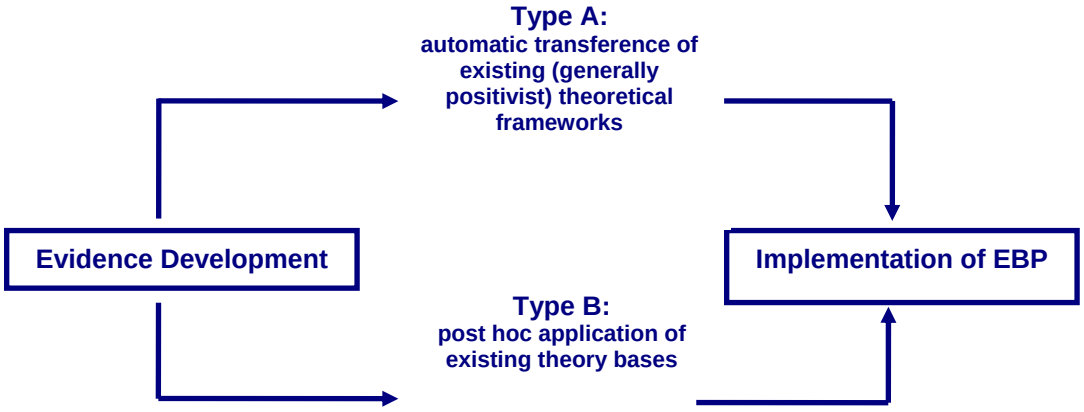

Figure 5: The Nature of Implicit Theory in EBP

Type A and Type B processes both bolster the retention of linear uptake interventions in that they lack an explicit theoretical framework from which to build a rigorous implementation methodology. They sustain the flawed assumption that evidence availability is the paramount feature of implementation. Recent studies (Buchan, Sewell & Sweet 2004; Grol & Wensing 2004; NICS 2003) negate this view in showing significant shortfalls between known (and available) evidence and its use in health care provision. While both Type A and Type B processes encapsulate the underdevelopment of theory to inform EBP, Type B methods are noteworthy in that they represent the narrow end of an expanding movement toward the explicit use of theory in EBP implementation. An excellent example of this movement is found in an examination of Diffusion of Innovation (DoI) theory.

DoI theory has been central in informing much of contemporary policy making on research utilisation. The most prominent theorist in this social influence theory is Everett Rogers, who, in 1962, identified that innovation is introduced within a system through social communication by adopters of the innovation. Rogers classifies adopters into five categories (innovators, early adopters, early majority, late majority, and laggards) and theorises that innovation occurs in stages from learning about the innovation (knowledge), and being swayed to consider its use (persuasion), through to implementation of the innovation and the validation and reinforcement that results from the positive outcomes of applying the innovation. Rogers' work promotes the importance of opinion leaders in influencing behaviour and the need for change agents/aides to mediate and support the change process. Rogers also proposes that, for innovation to be diffused, it must be seen as beneficial, compatible with existing values and experiences, lacking complexity, and having quantifiable results. These principles have been promoted consistently within the literature on achieving successful implementation of research innovation (Curry 2000; Greco & Eisenberg 1998; Grol et al. 1998; Lomas et al. 1991; Silagy & Haines 1998), although the DoI theory that drives and underpins the development of these principles is often not explicitly identified.

Increasingly, however, DoI is specifically and explicitly referred to as a key theory for informing research utilisation (Dopson et al. 2002; Lia-Hoagberg, Schaffer & Strohschien 1999; Nutley, Davies & Walter 2002; Sanson-Fisher 2004; Wolfe 1994). Importantly, the move to an explicit application of theory has led to a critical analysis of the value and applicability of DoI as an approach from which to build an understanding of the complexities of implementation of EBP. Dopson et al.'s (2002, p.36) analysis of the theoretical underpinnings of innovation and knowledge diffusion, as it relates to EBP, concludes that Rogers' theory maintains a linear, rational, and 'unitary' view of innovation implementation. This is supported by Nutley, Walter and Davies

(2002b, p. 17) who recognise that Rogers' work upholds the notions of 'rationality and linear stage models of decision-making'. These critiques posit that organisational contexts are rarely rational and linear. Therefore, centrally driven and staged DoI theory fails to accommodate the diversity and non-unitary nature of the organisational, disciplinary, and interdisciplinary interactions shaping the environments in which EBP needs to be adopted (Ferlie, Wood & Fitzgerald 1999; Ferlie et al. 2001; Ferlie & Shortell 2001).

Contemporary work on DoI for EBP attempts to be responsive to these complexities (Colyer & Kamath 1999; Damanpour 1991; Van de Ven et al. 1999; Wolfe 1994) and develop cohesive processes that characterise the theory/practice discourse. Beyond the parameters of DoI theory, analysts also focus consistently on the multi-directional nature of implementation. Van de Ven and Schomaker (2002) identify that the logic of evidence is only one aspect of a complex process that includes the power to generate empathy and issues of credibility and authority. In sum, the prevailing approaches are under review. There are now more calls for theory to provide the basis (rather than the postscript) for the development of both implementation methodology and intervention methods.

In a parallel process, there has been a growing acknowledgment that traditional quantitative research methodologies have limited capacity to explore the multi-directional complexities created by context, by locality specific factors, and by individual, team and organisational differences (Denis & Langley 2001; Ferlie, Barton & Highton 1998; Ferlie, Wood & Fitzgerald 1999; Green & Britten 1998; Nutley, Davies & Walter 2002; Walsham 1995). Specifically, as identified by Denis and Langley (2002):

> The diffusion and adoption of innovations is a social and political process in which the benefits and risks of technologies are distributed unevenly, are locally defined and thus have differential influences on individual decision-making. In this context, a model of decision-making that supposes a unified calculation based on the evidence is unlikely to fully explain diffusion patterns (p. 71).

Theory development for EBP, therefore, can be seen to be evolving across two dimensions. Firstly, and as discussed previously, the move is from the implicit to the explicit use of theory. Secondly, the explicit application of theory is increasingly characterised by a move away from the positivist/ scientific and quantitative research techniques that have traditionally shaped EBP implementation research and toward the use of interpretative methodologies with an increased capacity to 'offer a stronger account of the causes of research and development non-implementation' (Ferlie, Wood & Fitzgerald 1999, p. 99). The following subsections of this chapter will, therefore, explore the

explicit use of interpretivist theory in research into EBP and then outline the rationale for the explicit use of this approach as the scaffolding for this research study.

3.2 EBP AND ALTERNATIVE THEORETICAL PERSPECTIVES

3.2.1 EBP, Explicit Theory and Interpretivism

The interpretivist approach is defined by Crotty (1998, p. 67) as a theoretical perspective that seeks 'culturally derived and historically situated interpretations of the social life- world'. As a theoretical approach, interpretivism emerged in what Crotty (1998, p.66) terms a 'contradistinction' to the rationality of positivism. The application of this theoretical perspective to the scientific rationality of EBP would appear to be the antithesis of the theory/practice relationship discussed previously. It gains logic, however, when the process of evidence development and evidence implementation begin to be seen as two distinct, often unrelated, processes. As Cronje and Fullan (2003, p.353) articulate, 'the "scientific" practice of medicine is epistemologically and ethically incompatible with medical decision-making based on human experiences, preferences and values'. Evidence emerges from within the controlled scientific environment of the RCT while implementation, as identified previously, occurs within an uncontrolled and often very unscientific practice environment.

The explicit application of an alternative theoretical framework to positivism as a means to better understand implementation of EBP has gained momentum. The 2001 Academy of Management meeting, in Washington DC, included a symposium on the diffusion and adoption of health care innovations and identified that traditional theoretical perspectives saw the 'definition of innovations, evidence and organisations as fixed and non-problematic while new perspectives recognize the fluidity of boundaries between social contexts, objects and knowledge' (Denis & Langley 2001, Symposium Overview Statement). This view captures the essence of the theoretical shift from the linear (fixed) and rational (non-problematic) notions of positivism to the fluidity of interpretivism as the means through which to understand the complexity of the implementation environment. This responds to the fact that, EBP/EBM has 'failed to take account of the complex multi-dimensional nature of the implementation gap it faces' (Dopson et al. 2003, p 317).

Analysis of contemporary literature finds increasingly overt reference to interpretivism as a theoretical alternative holding promise for future research (Nutley, Davies & Walter 2002b, p. 13). Specifically, in regard to EBP, the interpretivist orientation has focused on using case study methodology as an effective mechanism through which to explore contextual complexities.

The leading proponents of the use of alternative theoretical approaches for developing insights into implementation of EBP are from the UK (Dopson, Ferlie, Fitzgerald, Gabbay, and Locock) and Canada (Denis, Hébert, Langley, Lozeau, and Trottier). These writers have consistently applied case study methodologies, recognising that 'there is much more to the implementation of evidence-based medicine than the one-off adoption of a formal structure or set of decision rules' (Ferlie, Barton & Highton 1998, p. S24).

One of the first writers to provide a clear rationale for the adoption of an alternative theoretical framework and methodology was Ewan Ferlie. In the 1999 paper on elective orthopaedics (Ferlie, Wood & Fitzgerald), Ferlie and his co-authors explicitly argue that the nature of the evidence-based movement is such that it is fated to achieve either 'non-implementation or very partial implementation at best' (p. 99). The authors make a very clear distinction between the 'abstracted world of pure rationality' that characterises the production of evidence and the reality of the 'local and experiential' world of the clinician. In their discussion of this 'local and experiential world', the authors cite contextual and practice issues such as 'inconclusive or contested knowledge' in relation to evidence; the strong move by clinicians to retain practice autonomy; the likelihood of resistance to external interventions; the nature of clinical knowledge; and the fact that much of what a clinician knows and applies is implicit and based on practice experience. While these issues are raised in other writings on uptake of EBP (Adams 2001; Armstrong 2000; McDonald & Daly 2000; Richman & Lancaster 2000; Ritzer & Walczak 1988; Straus & McAllister 2000), a unique aspect of the Ferlie, Wood and Fitzgerald study is the explicit rejection of traditional assumptions about innovations. The authors highlight the failure of technical approaches in providing a means to understand environments, and are forthright in their assessment of the potential of 'interpretative perspectives' to provide previously unattainable insights. While they concede that a qualitative research methodology lacks the scientific rigor of the RCT, they also argue that the interpretative approach of the case study methodology allows a capacity to:

> capture the meaning to human actors of social and organisational processes more readily than quantitative methods. They are more sensitive to the impact of local and historical contexts which is particularly important where there are a range of different stakeholders, each advancing a different version of reality. Case study methodology is holistic rather than reductionist, and can thus explore how complex systems can develop through time (1999, p. 100).

This assessment of the value of explicitly applying an interpretivist theoretical perspective (and a case study methodology) is reinforced through the work of Denis et al. (2002, pp. 61–65) in a

multiple (four health treatment areas) case study analysis on diffusion patterns for complex health care innovations. To develop insights into the rationality of EBP and the impact of organisational and political imperatives on uptake, they examined 'how different actors within organisations and organisational networks see the particular innovation, and the evidence associated with it, and how they interact with each other, and with the innovation, over time'. These authors developed a series of propositions relating to contextual impact on diffusion and a conceptual model of the diffusion process that comprises the interaction between the innovation (the evidence) and the adopting system (key actors, interests, values, power, champions, resisters).

The most notable recent studies that gather—using a case study methodology—participants' perceptions and interpretations relating to EBP, are the works of Dopson et al. (2001) and Ferlie et al. (2001). Both papers present the findings of a multiple case study analysis (seven case studies) involving 821 face-to-face interviews, 559 telephone interviews, and 1961 written questionnaires from which they identify the complexity of professional, contextual, and organisational factors. The findings are clustered into a series of core themes that increase understanding of influences on diffusion of research and provide an exemplar for rigorous interpretative research.

The potential of the case study methodology to explore the implementation of EBP is highlighted in Table 5, which adapts the work of Dopson et al (2001, pp. 40–44) to explore how the use of an alternative theoretical orientation allows for insights that would have been overlooked using a positivist perspective.

Table 5: Theoretical orientations: A comparative analysis of case study findings

Theme	**Philosophy underpinning the dominant Positivist Theoretical Perspective**	**Insights gained through application of Interpretivist Theoretical Perspective**
Evidence Robustness	The rationalism of positivism assumes a linear relationship between the availability of strong evidence and its application in practice. This theoretical assumption promotes implementation using passive educational and dissemination strategies that assume information provision equates to uptake	A key emergent theme from rigorous case study analysis was that this assumption was not valid. Evidence across all seven study sites was that this assumption is not supported by the evidence.

Theme	**Philosophy underpinning the dominant Positivist Theoretical Perspective**	**Insights gained through application of Interpretivist Theoretical Perspective**
Evidence meaning	The objectivist premise of positivism is that scientific evidence, derived from a sound experimental design, allows a singular interpretation of meaning	The finding across all case study sites was that the notion of a singular interpretation of the evidence was flawed in the practice context. Evidence interpretation is closely aligned to factors such as the role and background of the clinician; group and patient influences (social and professional); and, the politics of evidence. None of these parameters is accommodated in a linear model that assumes a singular interpretation of the evidence.
Evidence Availability	The issue of evidence availability is not explored extensively within the parameters of the positivist theoretical perspective. As a paradigm emerging from medicine, the bulk of available evidence is centred in this discipline. As a positivist construct, assumptions have been made around universal rather than variable availability across disciplines. Further, views that the link between evidence availability and application is consequential have been maintained.	Data from all study sites (albeit to varying degrees) found that the notion of universal availability of evidence, across discipline areas, was flawed. Further, this variable availability is a major issue in site-based uptake. The finding is particularly pertinent to this research study on multi-disciplinary practice. Evidence availability is a critical, yet significantly under researched aspect, of multi-disciplinary practice.
Evidence Hierarchies	Positivism assesses RCTs as having the greatest degree of validity based on the extent to which evidence is scientifically provable.	The value of different evidence types/hierarchies is consistently assessed differently all study sites. Diverse health professions have different views of what type of evidence is valuable and applicable to their practice. This view negates any implementation intervention assuming a linear relationship between scientific evidence and uptake. It is a critical issue in multi-disciplinary practice and is at odds with the positivist view of the RCT as the pinnacle of evidentiary rigor.
Nature of evidence	Evidence validity is linked to level of scientific measurability it involves and how high it sits on the hierarchy of evidence. The positivist paradigm fails to accommodate evidence not included within formal hierarchies of evidence.	The study found that clinical expertise and implicit knowledge are central in practitioner decision-making yet remain under researched within traditional intervention frameworks. The use of an interpretivist methodology allowed the scope and impact of this influential theme to be identified and explored.

Theme	**Philosophy underpinning the dominant Positivist Theoretical Perspective**	**Insights gained through application of Interpretivist Theoretical Perspective**
Professional networks	Professional networks and clinical expertise are given limited consideration against the rationality and science that dominate in the positivist theoretical framework	Evidence from across the case study sites consistently identified peer relationships/professional networks as being instrumental in shaping practitioner behaviour. This was particularly important given the importance of locality identified by the study. In direct contrast to notions of linearity and robust evidence equalling uptake, the influence of professional networks, peer influence and opinion leaders (as change inhibitors and facilitators), was found to play a major role in uptake. Importantly, decisions made using these influences were likely to be 'unchallenged by other professionals and translated into organisational policy' (p.43) regardless of evidence-bases.
Professional boundaries	Professional boundaries have been given no structured consideration within the rational and scientific framework of the RCT and the hierarchy of evidence	Professional boundaries, socialisation and practice differences were identified, across study sites, to be instrumental in decision-making. A key finding relevant to this study is that there is limited opportunity for multi-disciplinary discussion of evidence, despite the promotion of multi-disciplinary approaches to practice.
Context	The impact of context on implementation is not readily measurable and is subsequently given minimal consideration within the positivist epistemology.	Context was identified as influencing uptake of evidence at a variety of levels. The extent to which locality specific factors were identified as influential emphasises the importance of an interpretivist methodology in allowing for social constructions of context to be identified.

This comparative analysis highlights the importance of explicitly adopting alternative frameworks in examining EBP. The themes identified by Dopson et al. provide a substantial basis for the development of strategies for action that focus on context and receptivity rather than input/output models. The identification of core themes developed directly from 'culturally derived and historically situated interpretations of the social life- world' (Crotty 1998, p. 67) facilitates the provision of a much richer understanding of the implementation of EBP, as reflected in the recommendations made by the Dopson et al. (2002) study which focus on: the provision of sustained political and managerial support; the establishment of a supportive local organisational culture; the establishment and maintenance of quality relationships between and among local

groups; and ensuring that there is opportunity for information sharing and for improved and effective interchanges between groups (pp. 45–46).

3.2.2 Epistemology and this study

The previous subsection has shown without doubt that the movement to consider implementation processes from an alternative perspective is emerging (Adams 2000; Denis et al. 2002; Dopson et al. 2002; Ferlie, Barton & Highton 1998, 1999, 2001; McDonald, 2001; McDonald & Smith 2001). Additionally, the structured exploration of problems with uptake, implementation, and utilisation has recently moved outside a single-discipline focus to encompass multidisciplinary and organisational frameworks (Ashburner 2001; Bedregal & Ferlie 2001; Ferlie et al. 2001; Ferlie & Shorten 2001). Despite this, qualitative research on the uptake of EBP in the rural context remains scarce (Parsons et al. 2003) and, consequently, the extent to which the new insights on EBP are transferable to the rural context remains unclear. While studies such as those by Bedregal and Ferlie (2001) and Dopson et al. (2002) have examined rural or a mixture of rural and urban environments in their studies of EBP uptake, work on determining the factors that influence EBP uptake in rural and remote multi-disciplinary practice remains underdeveloped. Some work has also been undertaken that highlights the unique aspects of the rural context, and how they impact on EBP (Dunbar 2001; Kenny & Duckett 2003); the need for specialised models for EBP in rural settings (Taylor, Wilkinson & Blue 2001, Taylor et al. 2002); and the restrictions of positivist strategies in responding to rural environments (McDonald 2001). It is, however, important to build on this knowledge, particularly in relation to variability of rural settings and the multi-disciplinary practice arena.

To enhance existing knowledge bases, and in line with the move to apply theory explicitly, an interpretivist approach has been applied to this study. This research assumes that the development of any level of understanding of how health practitioners respond and relate to EBP (and, later, adopt it in their practice) depends on how they make sense of the world professionally and personally. This study analyses the system individuals are working in and aims to interpret the interrelationships and interactions from the perspective of those who encounter them in everyday life (May 1993).

The objectivism of the positivist tradition has been rejected, as it does not allow for insights beyond those that are measurable and observable. Evidence is developed in controlled environments where scientific notions of observation and outcome measurement are the norm. Implementation of EBP

occurs in uncontrolled environments in which multiple influences, unintended outcomes, and variation are the norm. The belief that there is a measurable and linear link between these environments is rejected.

Consequently, a social constructionist epistemology has shaped this study. It is through the interaction between subject and object, and the construction of that interaction, that we begin to gain insight into knowledge about the world (Blaikie 2000; Crotty 1998), and expand the current knowledge base relating to the adoption of evidence, specifically as it relates to rural and remote practice.

Within this orientation, the principles of symbolic interactionism guide the interpretivist orientation applied in this study, using a case study methodology. Symbolic Interactionism has a diverse history and orientation, which ranges from Dewey's notions of language as the differentiating factor of humanity, through to the work of Herbert Mead on society, self, mind, and action (Manis & Meltzer 1975; Ritzer & Goodman 2003). Interactionist research itself has given rise to multiple streams of theoretical thought and has developed to encompass such forms as Goffman's dramaturgical approach, game theory, labelling theory, role theory, and grounded theory (Crotty 1998), all of which focus on interaction as an approach through which to understand how people make sense of their world. This focus is pivotal as it allows for the application of a processual rather than linear approach (Manis & Meltzer 1975; Pope 2003; Ritzer & Goodman 2003) to conceptualising influences on implementation of EBP.

The seminal theorist in the development of the framework for symbolic interactionism was Herbert Blumer. The application of Blumer's framework, as a means to increase understanding of EBP as a scientific paradigm, is not unique to this study. Catherine Pope (2003) applied Blumer's work on social movement as a means to make sense of EBM as a contemporary social movement. She found that individuals interpret and apply evidence based on the meanings they attribute to situations. In her analysis, everyday practice and context, and the importance ascribed to them, are pivotal in making sense of how clinicians perceive EBP. While Pope focused on Blumer's work on social movements as an alternative means through which to 'analyse the internal dynamics of the struggle [against EBM]' (p. 279), she also argued for the value of using Blumer's symbolic interactionism as a framework for gaining insights beyond the linear, through assessing individuals' views of the world and how these impact in the social and professional context. The basic propositions that define symbolic interactionism are outlined in Table 6 and highlight the centrality of individual interpretation in human behaviour.

Symbolic interactionism includes the following basic principles: (1) human beings possess the capacity for thought, which is shaped by social interaction; (2) socialisation is the way people learn meanings and symbols; and (3) people are able to modify or alter the meanings and symbols they use in interactions by interpreting the situations they are engaged in (Manis & Meltzer 1975; Ritzer & Goodman 2003).

Table 6: Basic propositions of Symbolic Interactionism

	Elements of Symbolic Interactionism
1.	Human behaviour is shaped by the meanings allocated to different symbols, rather than by simple reaction. The nature of meaning that is allocated is determined by the interaction that individuals have with others.
2.	It is through interaction that the humanity and socialisation of the individual is achieved.
3.	The nature of society is determined not simply by the existence of structures and social systems but also by how people interact within those systems. Human society and social structure is itself maintained through the actions of the people within the society.
4.	Determinism is rejected, and it is assumed that individuals have the capacity to shape their own behaviour
5.	Consciousness involves interaction with oneself to ensure the development of reflective thinking and, through this, self-determination
6.	Human beings construct their behaviour. This is linked to the previous principle and assumes that, while individuals are influenced by previous events, they have the capacity to adopt or reject options based on the meaning they ascribe to them
7.	An understanding of human conduct requires the study of not just observable behaviour but analysis and understanding of non observable aspects of behaviour

Manis and Meltzer (1975, pp. 6–9).

Symbolic interactionism, therefore, encompasses notions of individual meaning, social interaction, and interpretation. Blumer (1969, p. 2) consolidated these concepts, arguing that, to make sense of social and individual phenomena, three basic assumptions need to be made:

1. Human beings act toward things based on the meanings that these things have for them.
2. Meaning is derived from, and arises out of, the social interaction that one has with others.
3. These meanings are handled in, and modified through, an interpretative process used by the person in dealing with what they encounter (1969, p. 2).

In line with these presuppositions, this study focuses on the notions of meaning, social interaction and interpretation, and how these have shaped practitioners' views and subsequent adoption of EBP. While the research questions outlined in the following chapter will provide the mechanism to explore these concepts, the underlying principles in administering that mechanism will be that in order to develop an informed understanding of EBP in the rural and remote context the data collection process must:

- provide the individual with the opportunity to discuss EBP and the meaning that that it has for them as a professional;
- explore how this meaning shapes participants' views of, and behaviour toward, adoption of this paradigm;
- examine why individuals have this view and what the links are between the meaning they ascribe to EBP and the social/professional context in which they have, or are, operating; and
- provide the opportunity for participants to consider how, why, and in what ways individual/professional and team/inter-professional interpretations of EBP have shaped their worldview of EBP.

The specific process for achieving these insights, through the case study methodology, is detailed in the following chapter.

4
Study Design and Methodology

4.0 INTRODUCTION

This chapter outlines the study design and methodology in four major sections. The first section details the study's parameters, aim and methodology, and the research questions. The second section focuses on the study design and provides an overview of the methods and processes used in the study, as well as the data analysis and clustering techniques applied. The third section outlines the methodological shortfalls, while the final section discusses the ethical issues and how they were addressed.

4.1 STUDY AIM AND RESEARCH QUESTIONS

The study aims to examine the uptake and perceived applicability of EBP by multi-disciplinary teams providing health services to rural communities. It is intended that findings from this study will be used to inform government policy development on the promotion, implementation, and uptake of EBP in rural and remote service environments. Three research questions have been developed to achieve this aim, each with a series of subsidiary questions.

4.1.1 Research Question One

What are the levels of knowledge, understanding, and uptake of EBP amongst practitioners providing rural health services?

Subsidiary questions

- What knowledge do practitioners have of the concept of EBP and its utilisation within and across health disciplines?
- How frequently, and to what extent, do rural practitioners access evidence as part of informing their treatment decisions?

- What type of evidence (scientific/non-scientific) is used by rural health practitioners to inform their practice?

- What are the central factors shaping decisions by rural practitioners to adopt an evidence-based approach to practice?

4.1.2 Research Question Two

How is the uptake of EBP affected by the diverse disciplinary practice bases of practitioners working in rural multi-disciplinary health teams?

Subsidiary questions

- How do the traditionally scientific frameworks that define EBP influence its uptake by scientific (medicine, physiotherapy) and non-scientific (social work, occupational therapy) disciplines within the rural multi-disciplinary team?

- How and why do practitioners from different disciplines resist/promote the uptake of evidence-based practice approaches within the rural multi-disciplinary team?

- How do team leadership styles and/or levels of professional dominance influence the uptake of EBP within the rural multi-disciplinary health team?

4.1.3 Research Question Three

How do organisational context and service delivery location impact on the uptake of rural multi-disciplinary EBP?

Subsidiary questions

- How does the organisational structure of the rural health service impact on the uptake of multi-disciplinary EBP?

- How does the level of organisational support for EBP impact on its uptake in the rural multi-disciplinary team, and why?

- How do size, location, and levels of isolation and fragmentation of rural health services impact on the uptake of multi-disciplinary EBP?

- How do different service delivery environments (i.e., hospital or community-based delivery settings) impact on the uptake of EBP?

4.1.4 Methodological Framework

A study design that allows for an empirical examination of both context and phenomenon (Yin, 2003) is necessary to investigate EBP in the rural, multi-disciplinary environment. The most effective mechanism to achieve this is case study methodology, which allows an exploration of precise and complex issues and the development of an understanding of the specific and unique circumstances shaping and defining each case studied (Stake 1995; Yin 2003). Terril (1997, p. 2) refers to case studies as adopting a 'multi-perspectival analysis' in that they consider input from 1) individual participants, 2) groups, and 3) the interactions between groups. The ability to examine EBP from a variety of perspectives is intrinsic to the constructionist epistemology and interpretivist theory driving this study. Yin (1984, 1994, 2003) identifies that the case study provides a fruitful perspective through which to explain the real life context and the complicated interconnections within it. Without the capacity to achieve these insights, this study would fail to hold true to the interpretivist philosophy that underpins it.

Case study methodology has been criticised for being unscientific, having limited capacity for generalisability of results (based on an inability for study replication), and lacking research rigour (Stake, 1995; Terril, 1997; Yin, 2003). Yin (1984; 1994; 2003) counters much of this criticism through the provision of a blueprint for developing a valid methodology that ensures both internal and external validity. This blueprint provides the structural framework informing the operationalising of the case study methodology used in this study. The blueprint includes developing a clear procedure in planning the study (including study aims, objectives and research questions); developing a clear data collection and storage process; and having a strong data analysis framework. Each requirement informs the development of this study design, with the mechanisms established to enhance validity outlined in the following sections.

The starting point in building an effective methodological framework was the development of a clearly articulated case designed with defined units of analysis.

4.1.5 Case Design and Units of Analysis

Multiple Case Design: The study site as the unit of analysis

The multiple, rather than single, case design allows for increased capacity for external generalisability of results (due to a deceased likelihood of findings assessed as unique to a single case) and provides for greater analytical benefits from replicable and/or comparative findings (Yin, 2003. p. 54). The rationale for adopting a multiple case design was informed by these advantages and driven by the conceptual work undertaken in previous chapters. This work found knowledge gaps across a number of EBP-related variables —specifically, knowledge gaps about how EBP is perceived by diverse disciplines working in health teams in rural practice across varying degrees of rurality. Three health service sites were studied to examine the impacts that degrees of rurality have on discipline practice and on the service delivery context. Sites chosen were given pseudonyms to ensure anonymity, and are known throughout the study as Queens Health Service (QHS); Base Health Care (BHC); and Hopwarrah Health (HHS). (Further details on each site are given in chapters 5, 6, and 7). Although the study was replicated across the three sites, it was shaped by theoretical rather than literal replication logic (Yin, 2003, p. 47) as it was predicted that contextual conditions would lead to contrasting findings of the same phenomenon. Thus, the study site was the unit of analysis but, given the need to examine disciplinary issues, rurality, and the service delivery context, the study also involved multiple embedded units of analysis (as shown in Figure 6.)

Embedded Unit: Rurality

The literature review highlighted the lack of research into rural practice and its impact on uptake of EBP (Parsons et al. 2003), thus identifying rurality as a focal point for analysis. Each study site has a different rurality and accessibility rating (based on the ARIA ratings defined in chapter 1): QHS is rated as ‘Highly Accessible’; BHC, ‘Moderately Accessible’; and HHS, ‘Remote’.

Embedded Unit: Inter and intra-disciplinary practice bases

Research has shown discipline-specific differentials in regard to historical practice frameworks (Cott 1997,1998; Cowles & Lefcowitz 1992,1995; Iles & Auluck 1990; MacDonald 1991); communication (Abramson & Mizrahi 1996; Milligan et al. 1999; Neill 1999); professional philosophy, world views, and role perception (Cant & Sharma 1998; Cott, 1998; Hammond et al. 1999; Lenkman & Gribbins 1994; Norris 2001; Peck & Norman 1999; Schofield & Amodeo 1999); and in discipline interpretations of underlying causes and most appropriate treatments for specified health conditions (Cooper et al. 1996; Davidson, 1990; Peck & Norman, 1999).

Research into EBP application in a multi-disciplinary environment must involve an exploration of complex cross-disciplinary issues (which may or may not be linked to the development of the new paradigm but which will impact at a variety of levels on successful uptake of EBP). Without these insights, policy strategies will continue to focus on promoting uni-disciplinary implementation interventions without applicability to the health service delivery context.

Embedded Unit: The service delivery context

The service delivery context was identified as particularly pertinent because the development and implementation of both the evidence-based paradigm and available treatment evidence bases are derived from metropolitan research pools (Dixon & Welsh 2000; McCarthy & Hegney 1998). Rural health service organisations have unique characteristics that shape decisions around the role of health practitioners, the role of the health service, the priorities for resource allocation within the rural health service, the characteristics of health service delivery and power and identity within, and outside, the health organisation. These are all factors that must be analysed if the applicability of the EBP to multi-disciplinary practice in the rural health service context is to be understood.

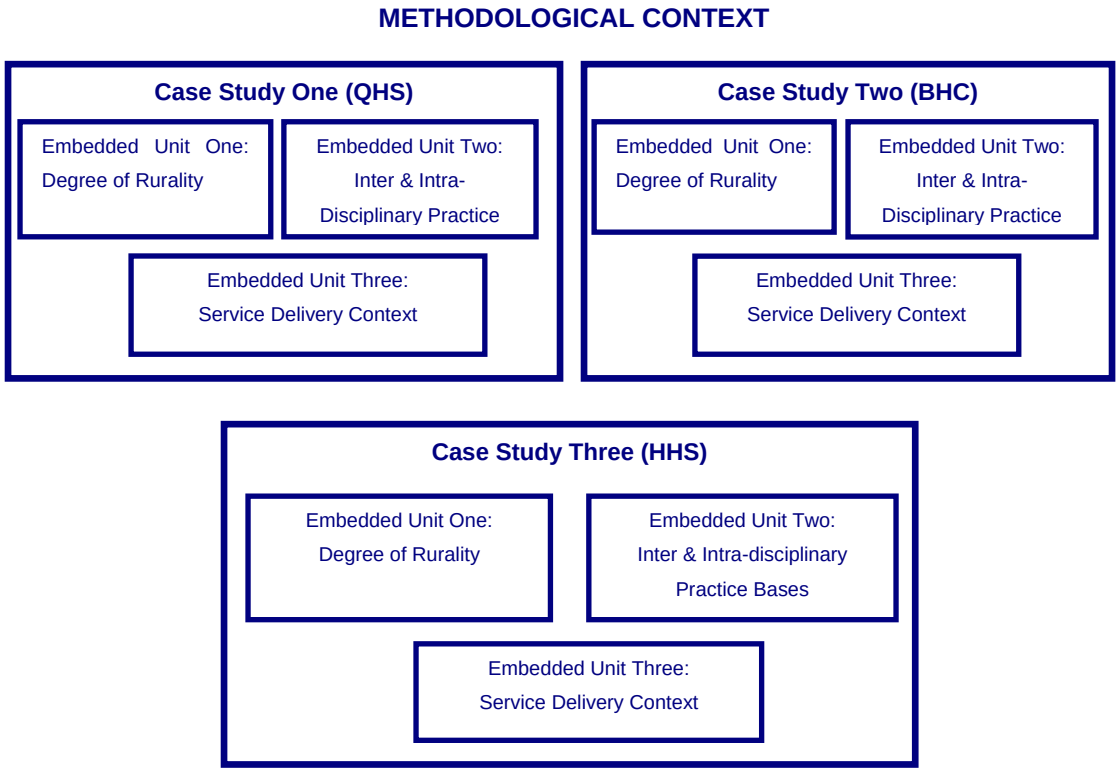

Figure 6: Multiple Case Design: Multiple Units of Analysis

(Adapted from Yin (2003, p. 40, Figure 2.4)

4.2 STUDY DESIGN AND RESEARCH METHODS

4.2.1 Study Focus

Case study methodology can be exploratory, explanatory and descriptive (Yin, 2003) based on the type of questions asked. In this study, questions are mainly ‘what’ questions (reinforcing the exploratory nature of the study) and ‘how’ questions (reinforcing the explanatory nature of the study) rather than descriptive.

The research study has applied both quantitative and qualitative methods and was undertaken over two phases. Phase one involved data collection using an exploratory approach to gather both objective and subjective data. Objective data included number of participants; discipline areas; years of practice; and frequency of usage. Subjective data examined participant views of EBP; written individual assessment of the value of the paradigm; influences on uptake; and perceived knowledge, attitude, and uptake. The treatment of time in this phase was cross-sectional and involved a descriptive survey, demographic analyis, and analysis of program documentation.

Phase two was exploratory and descriptive and used in-depth, semi-structured individual and group interview techniques to gather subjective data on participant views of EBP. Data were collected using a cross-sectional approach. This phase used qualitative data types with the aim of developing insights into the experiences of the study population. Data gathering focused on the quality of experiences and the exploration of the behaviours of—and relationships between—the different participant groupings within the healthcare system.

The following subsection outlines the methods used to gather data for phases one and two.

4.2.2 Study Methods

Practitioner questionnaire

Specific to Research Question One was the need to gain insights into the different levels of knowledge, understanding, and uptake of EBP by individual health service disciplines. A 43-item questionnaire was developed and distributed to 331 staff across the three study sites. A total of 207 questionnaires were returned across the three sites. Questionnaire content was devised from multiple sources, including Upton’s (1999a) questionnaire/attitude scale and an extensive literature review process. The review was used as the basis for a series of questions designed to test participants’ knowledge of EBP, to assess their skill base, and to rate their view/attitude on definitive statements about EBP.

Questionnaires were distributed to participants via line managers after the researcher had attended each site to outline the research study and provide opportunity for issues clarification.

Questionnaire distribution and collection occurred between April and June 2002. A copy of the questionnaire is included in Appendix A.

Program documentation

The review of program documentation allowed for the following site-specific insights across of the following levels:

- the level of localisation and customisation of clinical practice guidelines that had occurred within each identified discipline area and at each location;
- the extent to which each site had organisational policy and procedure in place relating to EBP;
- the organisational structure for each site, both generally and in relation to staff with portfolio responsibility for EBP; and,
- the professional development/organisational development processes on EBP in place prior to the commencement of the study.

This documentation provided the workplace profile needed to supplement insights gained through other data collection methods used in the study. Documentation was relevant to all research questions established for the study as it provided the workplace policy and procedural context for decisions on EBP.

An outline of the documentation collected and analysed from each site is included in Appendix B.

Demographic analysis

As the study involved three sites across varying levels of rurality, it was important to undertake a detailed demographic analysis for each of the areas included. This occurred at the commencement of the study period and informed each of the research questions, with particular relevance to question three on organisational size, level of isolation, and fragmentation.

Group interviews

A series of group interviews were conducted involving multi-disciplinary team(s) at each of the three study sites. A group interview approach was chosen as it allowed disciplines to discuss issues affecting the team from a multi-disciplinary perspective rather than from an individual team member perspective. This allowed team members to raise a wide range of different views; discuss issues relating to multi-disciplinary EBP with colleagues; and identify, in a group setting, factors influencing the perception and implementation of EBP within the particular health organisation. These interviews, relevant to research questions two and three, explored the issues that arose from both inter- and intra-disciplinary perspectives of multi-disciplinary EBP. The interviews sought to clarify how disciplines related to each other, the power structures within the team, how these influenced uptake, and whether practitioners within the team promoted or resisted the evidence-based paradigm, and why.

Interview schedules for group interviews are included in Appendix C.

All group interviews were audiotaped and later transcribed. All participants in the group interview process received copies of these transcripts for validation and to provide an opportunity for any corrections, further input, or elaboration on any issue.

Data collection occurred across the three sites between April and December 2002.

Individual interviews

In-depth, semi-structured individual interviews were conducted with fifty practitioners working in multi-disciplinary teams across the three study sites. Ten management level staff were also interviewed individually. Individual interviews with health practitioners and management/ administration were required to answer research questions two and three.

The interviews with health practitioners aimed to clarify issues at the individual practitioner and discipline level surrounding EBP adoption in the practice environment. It was important to give each practitioner the opportunity to raise and clarify issues outside the multi-disciplinary group interview process, particularly in instances where there were power imbalances within the team and/or where there were differences in treatment approaches between disciplines that individual practitioners were reluctant to raise in the group interview. It was also critical to provide individual practitioners with the opportunity to voice their views about EBP if these views were at variance with those of the team. This proved particularly relevant for social workers and nurses. Individual

interviews also provided the opportunity to raise issues in a safe environment while allowing the researcher to develop a rapport with each practitioner and discuss aspects of EBP and multi-disciplinary practice that did not emerge within the group setting. In addition, individual interviews allowed the researcher to understand the perspective and views of each participant, resulting in a clearer representation of issues raised. Interviews with health practitioners also clarified the impact of the organisation on the uptake of EBP in the multi-disciplinary practice environment, from the perspective of each.

Individual interviews with management/administration targeted the individual's views on the place of EBP in the strategic direction of the organisation and provided insights into the key organisational factors driving policy decision-making on EBP. Individual interviews highlighted the differentials between health and management/administration workforce views of EBP and its relevance to rural health service delivery, particularly at sites with limited delineation between clinical and administrative management functions.

Interview schedules for individual interviews are included in Appendix D.

All individual interviews were audiotaped and later transcribed. All participants in the individual interview process received copies of the transcripts for validation and to provide the opportunity for further input and/or clarification on any parts of the transcript content. A number of participants provided additional written input for the purpose of clarifying points they felt may lead to an inaccurate representation of their views or for providing supplementary information. No participant altered or retracted comments made during interview as a result of this validation process.

Data collection occurred across the three sites between April and December 2002.

Participant involvement in group and individual interviews depended on agreement from senior program managers at each of the health services; agreement from participants themselves; and ethics approval through each of the health services/hospital ethics committees. The researcher attended each site and met with management staff and health practitioners prior to commencing the data collection. During these meetings, the researcher explained the project, provided opportunity for questions, and informed staff of procedures for issues clarification, grievance, and the level and type of commitment required, should they become involved in the study.

The study has sought to maximise the validity of data gathered through a process of validation involving the review of both interview content and both interview and questionnaire findings. This process is outlined in Figure 7.

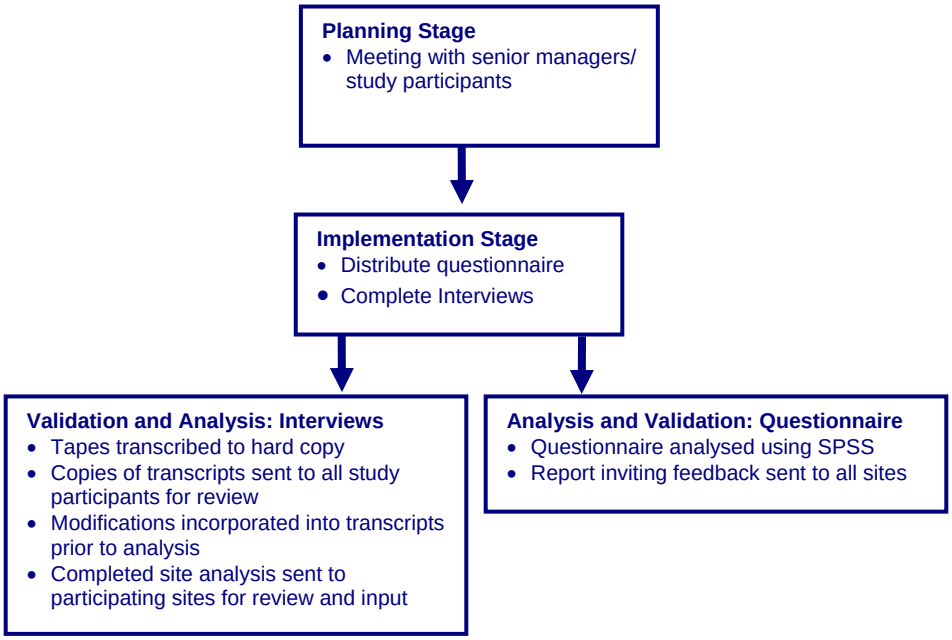

Figure 7: Data Collection and Validation Process

Assessing the value of research methods

The inclusion of multiple research methods was driven by the theoretical and methodological framework that informs the study. Theoretically, the chosen methods were determined by the need to gain the perspective of those who encounter EBP implementation and adoption issues in the practice environment—a requirement accommodated through individual and group interview. Methodologically, the case study approach is dependent on the use of multi-methods to ensure findings validity and generalisability. Each method has inherent strengths and weaknesses (Yin, 2003), and the use of multiple methods provides a means through which to balance these and, subsequently, increase the overall validity of the project. The strengths and weaknesses of each method, and how these related specifically to this study, are outlined in Table 7.

Table 7: Types of Evidence

Evidence Type(s)	Generic strengths of the method	Generic weaknesses of the method	Strengths/weaknesses encountered by this study
Document and Demographic Analysis	•stable – can be reviewed more than once •unobtrusive - exist prior to case study •exact – specific details contained •broad coverage – extended time span	•retrievability – difficult •biased selectivity •reporting bias – reflects author bias •access - may be blocked	**Strengths:** stable, unobtrusive, exact, broad coverage, good retrievability, good access **Weaknesses:** organisational document selection was made by organisational management (biased selectivity), organisational documents written by unknown author (reporting bias)
Interview – individual and group	•targeted - focuses on case study topic •insightful - provides perceived causal inferences	•bias due to poor questions •response bias •incomplete recollection •reflexivity – interviewee expresses what interviewer wants to hear	**Strengths:** targeted, insightful, question bias reduced by extensive review process involving academic and practitioner review, taping and reviewed transcripts minimised poor recall inaccuracies by interviewer **Weaknesses:** Level of response bias unknown, level of recall by participants unknown, level of reflexivity unknown
Observation – direct	•reality - covers events in real time •contextual - covers event context •insightful into interpersonal behaviour	•time-consuming •selectivity - might miss facts •reflexivity – observer's presence might cause change •cost – observers need time •bias due to investigator's actions	**Strengths:** reality, contextual, insightful, time spent integral to interpretivist orientation **Weaknesses:** degree of selectivity unknown, level of reflexivity and bias unknown

Adapted from Yin (2003, p.86)

4.2.3 Data Validity

Yin (1984; 1994; 2003) established a number of data collection principles based on the notion that the broad-based value of what is learned from a case study is dependent on the validity of the data presented from that case study. Data validity was achieved in this case study through the collection of multiple sources of data and through the process of data triangulation with emphasis placed, in

the planning of the study design, on the importance of achieving methods and data source validity. This is achieved through two types of triangulation:

1. Methods triangulation. This study has used in-depth interviews (individual and group), site study observation, survey, document, and demographic analysis. These methods represent five of the six methods identified by Yin (1984; 1994; 2003) ensuring that issues relating to strengths and weaknesses of each method are enhanced or countered as required.

2. Data source triangulation involving the use of multiple sources for data collection. Sources used for data collection in this study include the medical staff, allied health and nursing staff, and administrative staff at each of the service sites.

Yin (2003, p. 102) also refers to the need to create a case study database to increase data reliability. An electronic database containing all transcripts within multiple, cross-referenced data storage files was established for this study. Data source reliability can be monitored through analysis of the following groupings of transcripts:

- complete individual
- site specific
- discipline specific
- multi-disciplinary team specific
- research question specific
- theme specific

These transcripts have been coded within the relevant chapter citations to maintain a strong ‘chain of evidence’ (Yin 2003, p. 105) and to maximise data validity and reliability.

4.2.4 Population Sampling

Criterion sampling was used to determine inclusion of health practitioners across study sites. Criteria established for the study were that individuals and/or multi-disciplinary team members were involved in:

- Service delivery in hospital and community settings and;
- Service delivery in a rural and/or remote location;
- A treatment area with established evidence-based practice guidelines and/or a substantial and established research base for practice; and,

- Service delivery with practitioners from a variety of different health disciplines.

The sampling of individual practitioners occurred in two distinct phases. Phase one, the questionnaire component of the study, targeted all eligible health practitioners working at the study sites for involvement. Although criterion sampling was used to ensure uniformity in selection of study participants, and to maximise the ability to achieve proportional representation across diverse health disciplines, staffing profiles differed between sites due to variations in site sizes and service profiles. The sample size was representative of the site staffing profiles, acknowledging differentials in base numbers between health services. There were 331 questionnaires distributed and 207 were returned.

Phase two involved multi-disciplinary teams and individual practitioners, a sub-set of the multi-disciplinary team sample. The number of multi-disciplinary team and individual interviews was dependent on the number of teams that met study sample criteria at each study site. Based on these criteria, 4 team and 50 individual interviews were undertaken. A specific breakdown of numbers by discipline type and by site location is provided in chapters 5, 6, and 7.

Management staff members were selected for interview based solely on their role as program and site managers at the selected study sites. One group interview and 10 individual interviews were conducted with management staff across the three study sites.

4.2.5 Study Design Overview

A summary of the methods used, their relationship to the research questions, methods, and sample size are outlined in Table 8

Table 8: Study Design

Research Question	Data Type	Method	Sample	Timing
	PHASE ONE			
Research Question One What are the levels of knowledge, understanding and uptake of EBP amongst practitioners providing rural health services?	Quantitative	Questionnaire to all health practitioners who met study selection criteria	207 participants across 3 sites	A 3-month data collection period (April–June 2002
	Quantitative	Review of program documentation	All clinical practice guidelines relevant to study area	A 3-month data collection period (April–June 2002)
	Quantitative	Demographic analysis across each identified rural location	All relevant ABS data	At the start of the data collection phase of the study (April 2002)
	PHASE TWO			
Research Question Two: How is the uptake of EBP affected by the diverse disciplinary practice bases of the practitioners working in rural multi-disciplinary health teams?	Qualitative	Individual interviews with practitioners from identified disciplines who met selection criteria	Sub sample of 50 practitioners involved in questionnaire	April–Dec 2002
	Qualitative	Group interviews with multi-disciplinary teams who met study selection criteria	4 multi-disciplinary teams from 3 identified rural health services working in ARIA rated B, C & D sites	April–Dec 2002
	Qualitative	Individual interviews with health practitioners working within a multi-disciplinary team in an area which meets study selection criteria	50 individual practitioners working in previously identified multi-disciplinary teams	April–Dec 2002
	Quantitative	Program documentation	Clinical guidelines; Policy and procedure information; Clinical pathways documentation & implementation documentation	At the start of the data collection phase of the study (April 2002)
	Quantitative	Demographic analysis across each identified rural location	All relevant ABS data	At the start of the data collection phase of the study (April 2002)

Research Question	Data Type	Method	Sample	Timing
Research Question Three How does organisational context and service delivery location impact on the uptake of rural multi-disciplinary EBP?	Qualitative	Individual interviews with health service management team members working at each of the study sites	10 management team members from across the three service sites	April–December 2002
	Qualitative	Individual interviews with health practitioners working within a multi-disciplinary team at each of the study sites	50 individual practitioners working in previously identified multi-disciplinary teams	April–December 2002
	Qualitative	Group interviews with multi-disciplinary team at each site who work in an area which meets study selection criteria	5 multi-disciplinary teams from three identified rural health services working in ARIA rated B, C & D sites	April–December 2002
	Quantitative	Program documentation	Organisational structures Policy and procedure information EBP policy and implementation documentation	At the start of the data collection phase of the study (April 2002)
	Quantitative	Demographic analysis across each identified rural location	All relevant ABS data	At the start of the data collection phase of the study (April 2002)

4.2.6 Data Analysis

Yin's (1984, 1994, 2003) blueprint for the case study methodology documented the importance of developing an analytical strategy based on a framework of examination, categorisation, and recombination of evidence to identify study findings. In line with the commitment to provide a rigorous methodological framework, a detailed analytical strategy was adopted for each research question.

Analysis: Research Question One

Research question one aimed to examine and critique uptake issues at an individual health discipline level. To meet the requirements of the study question, data collection occurred through a descriptive survey, an exploratory interview process, analysis of program documentation, and demographic analysis.

Questionnaire data were analysed using the Statistical Package for Social Sciences, Version 11. Interview transcripts were stored and coded to themes using the Nvivo data management program, Version 2.1. The data types were both quantitative and qualitative, and data analysis reflected the techniques appropriate to this approach, as identified in Table 9.

Table 9: Data Analysis – Research Question One

Research & Subsidiary Research Questions	Data Collection Method	Data Analysis
Use of research to inform practice	Questionnaire and interview	• Frequency of use/non use
Type of evidence used	Questionnaire, interview and Program Documentation	• Coding of type of evidence used based on NH&MRC hierarchy • Frequency of use x discipline type • Classification of practice models using content analysis of data and coding to themes • Number of clinical practice guidelines by discipline type • Frequency of use x guidelines x discipline • Frequency of use of non guideline based evidence x discipline type • Number/variety of customised guidelines x discipline type • Rating of levels of relevance of evidence x discipline • Rating of levels of relevance of evidence x evidence type • Classification of role and centrality of guidelines using content analysis of data and coding to themes
Knowledge and utilisation of EBP	Questionnaire and interview	• Rating of level of knowledge within discipline • Rating of level of knowledge across disciplines • Use of content analysis to classify reasons for, and drivers/consequences of difference in knowledge levels
Frequency of access of EBP	Questionnaire and interview	• Frequency of use x discipline • Content analysis of transcripts and coding to themes
Central factors shaping decisions re use of EBP	Questionnaire and interview	• Categorisation of factors shaping decision-making • Rating of factors x disciplines • Content analysis of transcripts and coding to themes
Underlying theme of rurality	Demographic analysis	• Comparative analysis population, socioeconomic factors, levels of remoteness & geographic distance across degrees of rurality • Content analysis of transcripts and coding to themes

Analysis: Research Question Two

Research question two investigated the impact of intra- and inter-practice bases on the uptake of EBP. Data collection was undertaken through individual and group interviews, analysis of program documentation, and demographic analysis. The data types for research question two are quantitative (for program and demographic analysis) and qualitative (interviews). Qualitative data content was analysed and coded to themes. Initial coding was open to note patterns and themes emerging from the data. Patterns within cases were matched using axial coding, then concepts/themes were intensively analysed using selective coding as outlined by Morse and Richards (2002). This process allowed for labelling of data for ready retrieval from the Nvivo Version 2.1 data management package. Data analysis approaches for this research question are outlined in Table 10.

Table 10: Data Analysis – Research Question Two

Research & Subsidiary Research Questions	Data Collection Method	Data Analysis
Influence of scientific origins of EBP on uptake	Group and individual interviews	• Categorisation of influences on uptake of EBP • Analysis of participant perceptions of links between discipline focus and uptake levels • Classification of categories and influences x type of scientific and non scientific discipline
How and why do practitioners resist/promote EBP?	Group and individual interviews	• Analysis and categorisation of different types of resistance and rationale for these • Analysis and classification of different ways that practitioners resist EBP x discipline type • Development of list of resisters • Analysis and categorisation of varying levels promotion and rationale for this • Analysis and classification of different ways practitioners promote EBP x discipline type • Classification of promoters • Development of list of promoters
Team leadership styles and/or levels of professional dominance influence the uptake of EBP	Group and individual interviews	• Analysis and documentation of ways in which leadership/professional dominance drives the uptake of EBP within the multi-disciplinary team • Analysis and documentation of the ways in which leadership/professional dominance controls levels of uptake of EBP within the multi-disciplinary team
Underlying theme of rurality	Demographic analysis	• Comparative analysis population, socioeconomic factors, levels of remoteness & geographic distance across degrees of rurality • Content analysis of transcripts and coding to themes

Analysis: Research Question Three

Research question three aimed to gain insights into the impact of organisational context on the uptake of EBP. Data collection focused on individual and group interviews, analysis of program documentation, and demographic analysis. The data types for research question three are quantitative (for program and demographic analysis) and qualitative (interviews). Content and thematic analysis and coding processes for this objective mirrored those used in data analysis for research question two, as detailed in Table 11.

Table 11: Data Analysis –Research Question Three

Research & Subsidiary Research Questions	Data Collection Method	Data Analysis
How does the organisational structure impact on uptake of EBP?	Individual and group interviews and program documentation	• Management and organisational structure analysis • Analysis and categorisation of factors limiting/facilitating uptake from an organisational structural perspective • Analysis of differentials between clinical and administrative perceptions relating to EBP • Mapping of linkages between variant perceptions, existing management structure and levels of uptake • Number and type of documentation promoting/ supporting implementation of EBP • Analysis of management perceptions on role of EBP and rationale for this • Classification and rating of EBP within framework of management service delivery imperatives. • Analysis of practitioner perceptions relating to clinical/administrative management and EBP uptake • Identification and documentation of indicators/ descriptors of organisational culture x site • Identification of perceived impacts of culture • Analysis and categorisation of cultural factors x discipline • Analysis of links between culture & uptake
How does organisational support impact on uptake?	Individual and group interviews	• Analysis of levels of uptake x organisational structure • Analysis of linkages between management support data and practitioner uptake of EBP • Number and type of documentation promoting/ resisting EBP within the organisational setting • Analysis and categorisation of management promotion processes • Analysis and categorisation of management resistance processes • Analysis of rationale for management promotion of

Research & Subsidiary Research Questions	Data Collection Method	Data Analysis
		EBP • Analysis of rationale for management resistance of EBP • Analysis of impact of promotion/resistance process on levels of uptake
How does size, location and isolation and fragmentation impact on uptake of EBP?	Individual and group interviews and program documentation	• Size and structure analysis x geographical location • Analysis of service size x level of uptake • Location x service delivery structure • Analysis of uptake across location and service delivery structure • Number/variety of access mechanisms • Availability of research evidence x discipline type • Analysis of access levels x levels of uptake • Analysis of perceptions of impact of availability on uptake levels
How does the service delivery environment (hospital/community based setting) impact on uptake of EBP?	Group and individual interviews Program documentation	• Comparative analysis of hospital and community based program documentation. Categorisation of differences relating to EBP • Identification of programmatic differences - levels of uptake, existence of guidelines, structure of team and service delivery approaches • Analysis of differences in workforce structures/ discipline membership breakdowns within teams in hospital and community based settings • Cross referencing of programmatic and structural differences to analyse linkages of relevance • Analysis of perceived impact of differences on uptake of EBP
Underlying theme of rurality	Demographic analysis	• Comparative analysis population, socioeconomic factors, levels of remoteness & geographic distance across degrees of rurality

4.2.7 Data Clustering

Analysis techniques for questionnaire data were applied consistently across the three study sites, using a series of data clustering methods, to identify trends relating to knowledge and uptake of EBP. A copy of the questionnaire is provided in Appendix A. (The question and item numbers referred to in the following explanatory notes correspond to items in the questionnaire.)

Question 4 (a) to (i): Knowledge of evidence-based practice

Practitioners' knowledge of EBP was assessed based on responses (True, False, or Uncertain) to a total of 9 statements about the nature of EBP. Results were collated and responses given a rating of High (7–9 correct responses), Medium (4–6 correct), or Low (0–3 correct).

Question 5: Knowledge of evidence types

Participants were asked to list their knowledge of evidence types with responses rated against the National Health and Medical Research Council evidence hierarchy (as outlined in chapter 1). These definitions were used as the base (allowing for modifications in terminology) for assessing levels of participant understanding of the evidence hierarchy. Participants identifying three or more categories were assessed as having a high level of knowledge of the evidence hierarchy; those identifying between one and two categories were assessed as having medium levels of knowledge; and those identifying no levels, or who listed incorrect evidence types, were categorised as having no knowledge of evidence types against the NH&MRC framework.

Question 6 (a): Understanding of the concept of EBP

Practitioners were asked to self-rate their understanding of the concept of EBP on a five-point scale from 'Negligible' through to 'Excellent'. Results were collated and participants given a rating of High (based on 'Good' to 'Excellent' level response categories), Medium ('Moderate' level response categories), or Low ('Basic' to 'Negligible' level response categories).

Question 6 (b): Knowledge of availability of research evidence in own discipline area

This variable was assessed using a five-point scale from 'Negligible' through to 'Excellent' with practitioners asked to self-rate their knowledge of research evidence available to their own discipline area. Results were collated and participants given a rating of High (based on 'Good' to 'Excellent' level response categories), Medium ('Moderate' level response categories), or Low ('Basic' to 'Negligible' level response categories).

Question 6 (c): Knowledge of availability of research evidence relevant to other health disciplines

Practitioners' self-assessment of their knowledge of the availability of research evidence relevant to other health disciplines was assessed on a five-point scale from 'Negligible' through to 'Excellent'. Results were collated and participants given a rating of High (based on 'Good' to 'Excellent' level response categories), Medium (Moderate' level response categories), or Low ('Basic' to 'Negligible' level response categories).

Question 7 (a) to(j): Skill levels relevant to the implementation of EBP

Practitioners' skill level in practical application of EBP was assessed based on responses to ten statements. Participants were rated in computer and internet use, framing an evidence-based

research question, interpreting research findings, evaluating relevance and applicability of available evidence, reviewing professional practice, and transferring research findings to a practice context. Ratings used a five-point scale from 'Negligible' through to 'Excellent'. Results were collated and participants given a rating of High (based on 'Good' to 'Excellent' level response categories), Medium ('Moderate' level response categories) or Low ('Basic' to 'Negligible' level response categories).

Question 8 (a) to (o): Attitude to the evidence-based movement

Practitioners' attitude to evidence-based practice was assessed based on responses to 14 statements. Practitioners rated their views on each statement on a five-point scale from 'Strongly Disagree' to 'Strongly Agree'. Results were collated and participants assessed as having (out of 14) either a mainly positive (7–14) or mainly negative (0–6) attitude to the EBP model.

Question 8 (l) and m): Quality and availability of discipline specific evidence

Practitioners were given the opportunity to rate the extent to which they believed that evidence bases in their discipline areas were plentiful and of high quality on a five-point scale from 'Strongly Disagree' to 'Strongly Agree'. Results were collated and participants were assessed as believing evidence quality and availability to be either 'Poor' or 'Good'.

Question 9: Frequency of use of evidence to inform practice

Practitioners were asked to nominate the regularity they accessed evidence to inform their practice based on the following timeframes: 'Daily', 'Weekly', 'Monthly', 'Quarterly', 'Yearly', 'Very infrequently', or 'Never'. Results were collated and time spans consolidated to represent frequent users (daily to monthly), infrequent users (quarterly to yearly) and non-users (very infrequently to never).

This is a complex variable to assess because, while the statistical data are able to identify frequency of use of evidence, the type of evidence used varies between practitioners. Therefore, while percentage usage can be measured, the statistical data on its own provides no insights into the type of evidence being used (randomised control trials or case studies). This is a significant shortfall of the data collection which has been countered as effectively as possible by cross-referencing of these data with written and/or interview feedback on the same variables. This occurs throughout the results chapters for each health service site.

Question 10: Level of use of clinical practice guidelines

This variable was assessed by providing participants with the opportunity to respond to a structured question through the provision of a 'yes' or 'no' answer.

Question 11: Level of involvement in the development of evidence-bases/clinical guidelines

The extent to which practitioners have been involved in the development of clinical guidelines was assessed statistically through the number of 'yes' or 'no' responses to a structured question.

Question 12: Types of evidence used in practice

As part of the process of determining the different evidence types used by practitioners, participants were asked to rate the evidence types they used to inform practice, although some practitioners indicated that rating evidence types was too difficult given the diversity of practice. This variable contained a range of from 12 to 1863 possible responses across all returns. To accommodate the scope of this variable, a data clustering technique was used to classify evidence types into categories of 'high' and 'low' band usage. The input data on evidence types for informing practice provided 14 options that participants were asked to rank, based on levels of use. Evidence types listed in the questionnaire or added by participants were:

- Randomised control trials
- Journal articles
- Professional development
- Colleagues from other disciplines
- Input from patients
- Text books
- Practice audits
- Systematic reviews
- Initial formal training
- Colleagues from own discipline
- Own practice experience
- Internet resources
- Drug company representative
- Latest technology

These data were collated into a spreadsheet SPSS with cross-tabulation, allowing it to be grouped by region and by health discipline. All respondents who provided a ranking gave at least 6 ranked evidence types, some participants ranked all 14, while the majority ranked up to 9 options.

The first three rankings (1st, 2nd, and 3rd most often used) were clustered to identify the evidence types with high usage rankings. These methods were taken as benchmark types across health disciplines. Each health discipline was examined against these and evaluated for percentage uptake. This created two bands of evidence types: high usage and low usage.

The high-use evidence types identified were journal articles, own practice experience, colleagues from own discipline, and professional development. The low-use evidence types identified were randomised control trials, systematic reviews, colleagues from other disciplines, and input from patients.

Question 13: Activities undertaken linked to EBP in the previous six months

Activities undertaken in the six months prior to distribution of the questionnaire were collated and tabulated by discipline area and health service. These clustering techniques have been used consistently in all data analysis to ensure uniformity of assessment across the three health sites.

4.3 METHODOLOGICAL SHORTFALLS

The use of a structured procedure to maximise internal and external validity was paramount in study design planning and in research implementation. Despite this, there were a number of areas where the original procedural framework recommended by Yin (1984; 1994; 2003) was compromised due to methodological shortfalls. The main problematic areas related to adhering to criterion sampling guidelines; the ability to gain broad-based input from participants; and the maintenance of participant anonymity during data analysis and presentation of findings.

4.3.1 Criterion Sampling Constraints

Criterion sampling was chosen to provide a structured framework for participant inclusion; however; site characteristics limited consistent adherence to established guidelines, with organisational size and service focus key factors in determining universal application of criteria. The sampling criteria, which required participants to deliver services in hospital-based and community-based settings, targeted sub-acute service delivery. QHS is, primarily, a sub-acute site so adherence to criteria presented no difficulty. BHC, however, operates under a different service delivery structure and had fewer practitioners who met all sampling criteria. To counter this, the health service management was asked to nominate practitioners for involvement in the study, in line with the established criteria, Those nominated were from the ‘Stroke Clinical Pathways Team’, a treatment area closely aligned with the criteria set for sampling. However, this approach had shortfalls, which—while not immediately evident—emerged during the data collection stage, when it became apparent the interviewees had worked intensively in developing a clinical pathway in a program area with a strong, and existing, evidence-base. This had given the practitioners a strong team commitment and recent experience in the development and implementation of EBP, and while they provided excellent feedback, the extent to which this group was representative of the general

population of BHC is questionable. A comparison between questionnaire and interview results suggests that there are some differences between the interview sample and the broader service population, although these differences have not been measured robustly. Case study methodology seeks to be representative of meaning rather than location with criterion sampling a strategy to maximise results generalisability. Sampling bias at BHC may have impeded the attainment of this goal. Focusing on one particular treatment area also potentially limited the generalisability of BHC results as data was gathered from a select group of practitioners based on one BHC site. As the service has two geographically separate sites, this constraint is noteworthy, especially as the research questions established for the study sought feedback on the impact on EBP of service fragmentation and isolation. By focusing on a centralised treatment area, this perspective was gained only from one part of the BHC service system, which was the less-isolated component of the service.

While the feedback that was received was extensive and insightful, these limitations are concerning.

The ability to achieve sampling based on established criterion was not an issue at HHS given the interactive community/hospital service delivery focus and the fact that participants were interviewed across all service locations within Hopwarrah.

4.3.2 Anonymity Constraints

An important aspect of the established methodological procedure was ensuring participant anonymity. While processes were put in place to minimise identification of participants in collating results, it became clear when writing the case study reports that site size, staffing profile, and the nomination (by management) of specific and identifiable teams all had major impacts on how results could be reported. For example, the staffing profiles for BHC and Hopwarrah meant it was often possible to identify only site-specific trends rather than discipline-specific trends. This was because if a social worker raised an issue, identifying the discipline would identify the individual as there was only one such practitioner employed. To address this, an alternative, non-identifying coding system was established. Although this system was effective, it did place some constraints on cross-site, inter-disciplinary reporting (a constraining factor given the focus of research question two); however, because the ability to ensure anonymity is central to individuals sharing their perspectives, this was the paramount consideration. The thematic approach used allowed the individual and diverse stories that characterised each site to be told, and compromising confidentiality—an important aspect of the methodology—could not be justified on the basis of mapping cross-site trends. These shortfalls compromised the extent to which the study was able to

adhere to procedural frameworks established to maximise validity. Nonetheless, results received during data collection were substantial and validated through the variety of mechanisms outlined in previous sections of this chapter. These results are detailed in the following three chapters, each reporting on one case study site. The final chapter consolidates the findings and examines the cross-site links, trends, and patterns that were identified through application of this methodology.

4.4 ETHICAL CONSIDERATIONS

4.4.1 Ethics Approval

Ethical approval appropriate for research involving individuals and program areas was sought through the following established organisational structure at the study sites:

- University of Ballarat Human Research Ethics Committee
- Queens Health Services Human Research Ethics Committee
- Base Health Centre Board of Management – Ethics Subcommittee
- Hopwarrah Health Services Board of Management – Ethics Subcommittee

Principles guiding the data collection and analysis process were observed to serve the best interests of all participants and all relevant program areas at each stage of the research process. Ethics documentation for each of the health services is provided in Appendix E.

4.4.2 Anonymity for Study Participants

As identified, anonymity was central to the ethical research practice planning throughout the data collection process with the following mechanisms put in place at the outset:

- Survey data collected did not contain any information allowing for identification of individual participants. Cross-disciplinary, generalisable information on levels of knowledge and understanding of EBP was aggregated with no identification of individual participants.

- Individual interviews were conducted in physical environments chosen to maintain participant anonymity. All identifying information was removed at the time of interview transcription. Staff employed to type transcripts were briefed on confidentiality and participant rights and were required to sign a confidentiality agreement prior to employment (see Appendix F). Maintaining participant anonymity during this component of the study was more difficult than it had been with the survey. BHC and HHS employed fewer practictioners of each discipline (and, in some cases, only a single representative from each), which

significantly decreased the capacity to ensure participant anonymity, despite the removal of identifying information. The principle mechanism put in place to maintain participant anonymity involved the use of a different coding system dependent on site location. Interview data from the (larger) QHS site was coded to themes *and* discipline types, while data from BHC and HHS was aggregated and coded to themes with no reference made to discipline areas, except when a particular discipline area had sufficient representation to ensure maintenance of anonymity. This was found to be a limiting factor (as discussed in section 4.3 'Methodological Shortfalls'). While this approach did not remove all possibility of participant identification, it significantly reduced its likelihood. Coding schedules identifying transcripts, disciplines, and individuals have been developed and stored securely in a location separate to transcripts and any information identifying individual participants.

- Group interviews were conducted to maximise the capacity to maintain participant anonymity. As with the individual interviews, all identifying information was removed at the time of interview transcription, and staff employed to type the transcripts were briefed on confidentiality and participant rights and were required to sign a confidentiality agreement prior to employment (see Appendix F). The group context meant that complete anonymity for participants or program areas could not be assured. As the study targeted specific teams across selected locations, there is capacity to identify teams, and linked to this, practitioners within teams. However, given the paucity of research on multi-disciplinary EBP across degrees of rurality, it was not possible or desirable to mask all identifying information relating to the demographic of sites chosen for study, and this was explained to all participants during the process of gaining their informed consent. It was also declared in all documentation forwarded to hospital/health services ethics committees, and senior management staff at each site were given an opportunity for input on the level of site identification. Due to concerns around this issue, the decision was made to give each site a pseudonym and to use codes to identify teams as a whole, rather than individuals within teams.

- Program documentation and demographic analysis involved information both readily available and not readily available in the public domain. This information is unlikely to create an anonymity issue for individual participants; however, organisational profiles are potentially identifying. The use of pseudonyms significantly decreases the likelihood of site identification; however; this cannot be totally discounted.

4.4.3 Informed Consent Processes

Prior to data collection commencement, all potential participants were provided with verbal and written information outlining the aim of the study, the data collection processes, and what was required from participants (see Appendix G). The researcher also visited each health site prior to, and during, the data collection process to provide opportunities for issues clarification. All participants gave written consent prior to group and individual interviews, and were given the option of withdrawing from the data collection process at any stage. It was also made clear that withdrawal from the study at any stage would have no consequences for participants.

4.4.4 Participant Support Processes

Although the information gathered during data collection focused on practitioners' professional rather than personal experiences, it was recognised that additional support might be required by partcipants as a result of the issues raised. The study's focus on interrelationships within the rural multi-disciplinary team had the capacity to give rise to concerns around power relationships, past or present conflicts within the workplace, and/or inequalities relating to EBP from discipline-specific perspectives. This was particularly pertinent in the group interview process with the influencers of team dynamics and organisational or team culture. In terms of participant support, the researcher—who had worked for many years in the health and welfare field, and was a counsellor in a number of program areas—possessed the experience and the capability to identify quickly any levels of distress, conflict, or participant concern that might arise during interviews. While there were no occurrences of this, nor any requirement for participant debriefing at any stage of the data collection process, had there been need for such support, participants would have been referred to the appropriate organisational supervisory support structure or external counselling.

4.4.5 Participant Involvement

A potential issue—given the scientific tradition of EBP and the perceptions often in place in clinical areas regarding the validity of case study methodologies—was that the researcher's strong background in the field of community services and health did not include clinical experience. Consequently, the following mechanisms were implemented to assure participants that interpretation of any clinical data was accurate:

- The appointment of a clinician as an Associate Supervisor.
- The establishment of a feedback process, with designated contact people, at each of the study sites. This feedback occurred variably throughout the study and enabled a variety of

disciplines to have input in the data interpretation and analysis process and to increase the internal validity of the study (in line with good practice in qualitative methodology).

- The provision of information on research progress, the issues encountered, and assessments of the findings to be given by the researcher, on request, at staff forums. This aimed to provide information sharing and staff development and was accessed variable across sites.

Feedback for the QHS site included attendance at a staff training forum on EBP and feedback on issues relating to the research process; a presentation at the annual Allied Health Conference on the findings of the research; and provision of written updates of findings for distribution and feedback, including conference papers relating to the findings.

Feedback for the BHC site involved verbal contact with the senior clinician, and provision of written updates and conference papers for distribution and feedback.

Feedback for the HHS site involved verbal contact with the senior clinician, and provision of written updates and conference papers for distribution and feedback. Contact also included attendance at two forums with staff involved in data collection where issues specific to the remote context were discussed.

In addition, all participating health services will be provided with the opportunity to have the findings presented at a staff training and development forum upon completion of the study.

4.4.6 Researcher Debriefing

In instances in which the researcher experienced any level of distress as a result of the data collection and analysis process, support was provided through the PhD supervisory structure at the University of Ballarat. There was no instance in which the level of distress was such that the researcher needed to seek support from the university's counselling service.

4.4.7 Security of Data

All data collected is stored in a locked cabinet in the postgraduate research office with access limited to the researcher, except for the involvement of a typist during data transcription. Transcript security was ensured through a pre-employment agreement that tapes would be returned within a set timeframe and kept locked in a secure location at all times. Data were kept in a locked cabinet throughout data collection, data analysis, and thesis write-up. Upon completion of the research, data will be archived for five years in the School of Behavioural and Social Sciences and Humanities.

5
Case Study A: Queens Health Service

THE EVIDENCE-BASED EXPERIENCE IN A MAJOR CITY IN REGIONAL VICTORIA

"We see things differently in our training and that really shapes where we go with things."

5.0 INTRODUCTION

This is the first of three chapters that present study findings. Each chapter encompasses a case study for a specific study site. A consolidation and discussion of findings across the three study sites is provided in the concluding chapter.

This chapter presents the findings of the case study of Queens Health Service.

Queens Health Service (QHS) is a sub-acute service operating as part of a large health service located in a Victorian major regional city that is rated as 'accessible' under the ARIA classification system. The structural detail of the larger organisational configuration incorporating QHS is outlined in section 5.1. QHS is guided by a strong organisational commitment to the use of EBP in the practice setting and promotes a variety of processes to facilitate the application of evidence to inform treatment decisions. The study participants for QHS were employed in either the Medical (Aged Care, Rehabilitation, Palliative Care) or Allied Health (Inpatient Rehabilitation, Rehabilitation in the Home) categories of service provision. The specific teams taking part in the study were the *Inpatient Rehabilitation* and *Rehabilitation in the Home* program teams. A breakdown of numbers and discipline types specific to these teams are included in Table 12.

This chapter comprises nine sections. The first two sections present an organisational overview and a descriptive analysis of the participant characteristics, and the following six sections relate to specific elements of the study's research questions. The final section reviews the findings around the six emergent themes defining the case study. These themes and sub-themes are depicted in Figure 8 (overleaf).

Figure 8: Emergent Themes QHS

Catherine: Please note that this sheet was designed within a separate PDF file and will be printed separately

5.1 PROFILE OF QHS STUDY PARTICIPANTS

This first section provides a profile of QHS participants across discipline area and years of service and outlines the methods involved in the collection of these data.

5.1.1 Data Collection Methods at QHS

Data collection at the QHS involved questionnaires as well as individual and group interviews. Data collection methods and levels of participation detailed in Table 12.

Table 12: Data collection methods and interview participation for QHS

Data collection methods	**Number of participants**	**Discipline Areas**
Questionnaire	105 Multi-disciplinary Health Practitioners	Refer to breakdown in Table 13
Individual Interviews with practitioners	25 Staff *(a sub set of questionnaire participants)*	Medicine (2) Nursing (7) Physiotherapy (2) Occupational Therapy (3) Social Work (4) Prosthetics/Orthotics (2) Podiatry (1) Speech pathology (1) Dietetics (1) Psychology (2)
Group Interviews	2 Teams (Inpatient Rehabilitation (IPR), Rehabilitation in the Home (RITH)) *Staff in these teams were all also involved in the individual interview process*	**IPR** Medicine (1) Physiotherapy (1) Podiatry (1) Occupational Therapy (1) Nursing (1) Prosthetics & Orthotics (1) Speech Pathology (1) Dietetics (1) **RITH** Medicine (1) Psychology (1) Social Work(1) Occupational Therapy (1) Nursing (1)
Individual Interviews with management	5 Management Staff *3 of these staff (as identified) were also involved in the individual interview process. Only the Director of Aged Care and Rehabilitation Medicine was involved in management, individual and group interviews.*	Director of Nursing Director of Allied Health Director of Aged Care & Rehabilitation Medicine *(also interviewed individually)* Clinical Manager (Physiotherapy) (*also interviewed individually)* Clinical Manager (Prosthetics/ Orthotics) (*also interviewed individually*)

5.1.2 Profile of Study Participants

QHS participants were recruited from 11 health disciplines working in the delivery of sub-acute services. Table 13 details the level of involvement of each discipline in the different data collection methods.

Table 13: Level of involvement in data collection at QHS

HEALTH DISCIPLINE		**Questionnaire**		**Individual & Group Interviews**	
	Total N	**n**	**%**	**n**	**%**
Medicine	4	3	75	2	50
Nursing	72	40	56	7	10
Social Work	14	6	43	4	67
Psychology	8	7	88	2	25
Physiotherapy	16	10	63	2	12.5
Occupational Therapy	13	12	92	3	23
Dietetics	10	7	70	1	10
Speech Pathology	12	8	67	1	8
Podiatry	4	4	100	1	25
Prosthetics/Orthotics	8	6	75	2	25
Exercise Therapy	4	2	50	0	0
Management				5[a]	100
Total numbers/overall Percentages	**165**	**105**	**64**	**27[b]**	**16[b]**

a While 5 management staff were interviewed , they tally as only 2 additional staff as 3 management staff are already included in the overall discipline tally numbers (refer Table 1). b. This incorporates individuals that, due to their management/clinician role mix, were involved in a split interview process. They were therefore interviewed on two aspects of the study but included in the tally only once.

The return rate for questionnaires across all disciplines at the QHS site was 64% (n=105) with allied health practitioners providing the highest overall return rate of 70% (n=62). Individual (health practitioners and management) and group interviews were conducted concurrently with a 16% involvement rate across the study site.

The length of time QHS study participants had been working in their discipline area varied. Sixty-seven percent of medical practitioners and 50% of nurses had practised for between 25 and 45 years. This contrasted with allied health where the majority (82%) of practitioners had practised for less than 20 years, and 74% of these had practised for less than 14 years. The high number of early career allied health practitioners is particularly notable in psychology, where 86% had practised for less than four years. The importance of this aspect of the QHS participant profile will be examined in detail later in this chapter.

5.2 THE QHS ORGANISATIONAL OVERVIEW

5.2.1 QHS as Component of an Extended Site

QHS operates as a sub-component of the Queens Health Service Extended Site (QHSES), which is located in a major regional population centre of over 80,000 people. QHSES is the principal referral hospital for the region and serves the needs of 200,800 people residing in an area of 48,000 square kilometres. Most QHSES services are provided from two centrally located sites within the large regional city; the remaining services are provided from a number of residential and community sites spread throughout the city. QHS is one of the two larger central sites and specialises in the delivery of sub-acute services. QHS is an integral part of the larger organisational structure but is located separately (both geographically and programmatically) within QHSES. Although study participants from QHS account for only 15% of the total staffing profile of QHSES, they have been treated as a distinct unit of 165 health practitioners for the purpose of this study. Despite the focus on QHS as a single work unit, an integrated profile is provided of QHSES in its entirety, outlining the size and complexity of the organisation. This knowledge is important to facilitate understanding of the organisational and operational issues explored in the chapter.

5.2.2 The QHSES Organisational Environment

Queens Health Services Extended Site (QHSES) was created in 1997 to provide an integrated health service model through the amalgamation of the public hospital (established in 1856), the aged care and rehabilitation facility (established as a Benevolent Society in 1857), and the psychiatric service (established as an Asylum in 1877). A total of 2,724 staff (representing an Equivalent Full Time [EFT] staffing allocation of 1,732.30) are employed by this organisation across a variety of service areas as outlined in Tables 14 and 15 (QHSES Annual Report 2002).

Table 14: Staffing profile for QHS extended site (EFT)

Staffing Type	**Staffing Numbers**
Nursing	828
Administration/Clerical	247
Allied Health	168
Hotel/Allied	397
Medical	91
TOTAL EFT	**1731**

The organisational structure for QHSES depicts a multi-layered hierarchy operating under the auspice of a community-based Board of Management. While this board has ultimate accountability (to the state Minister for Health) for service delivery by QHSES staff, the site is operationally

managed through an Executive Staff Council comprising a Chief Executive Officer and six Executive Directors, each with responsibility for between six and eleven service areas.

Table 15: Service profile for QHSES

SERVICE CATEGORY
Medical Aged Care, Cardiology, Endocrine & Diabetes, Gastroenterology, General Medicine, Geriatric Assessment, Infectious Diseases, Oncology, Palliative Care, Rehabilitation, Renal, Thoracic
Surgical CSSD, Day Procedure, Ear, Nose, Throat Surgery, General Surgery, Facio Maxillary Surgery, Neuro, Ophthalmology, Orthopaedic, Peri operative, Plastic Surgery, Urology, Vascular Surgery
Women and Children's Services Adolescent Medicine, Domiciliary Care, Gynaecology, Maternity, Neonatal, Obstetrics, Paediatrics, Paediatric Oncology
Psychiatric Services Child and Adolescent Services, Adult-Community Services, Aged Care Psychiatric Services, Community Care Unit, Inpatient, Regional Psychiatric Community Services
Critical Care Services Anaesthetics, Critical Care, Emergency Department, Intensive Care
Department of Radiology CT, Imaging, Ultrasound, MRI
Clinical Resources Pharmacy, Clinical Measurements, Pathology (contracted service)
Allied Health Services: Community Integration, Dietetics, Occupational Therapy, Physiotherapy, Podiatry, Psychology, Prosthetics & Orthotics, Recreation, Rehabilitation in the Home, Social Work, Speech Pathology
Community Services Aboriginal Liaison, Asthma Counseling, Bereavement Support, CAPS, Carers Respite & Carers Choice, CASA, Diabetes Education, Dialysis, Hospital in the Home, In-home Accommodation Support, Linkages Post-Acute Care, Lymphedema Support, Nurse Education, Post-Acute Care, Hospice
Day Centres 4 day centres
Residential Facilities 13 services (comprising high and low level care)
Regional Services Aged Care Assessment Services, Psychiatric Community Services, Regional Palliative Care Team, Regional Continence Service, Trauma Retrieval Service
Information Services Case Mix Analyst, Management Information Services, Health Information Services (Medical Records), Information Technology, Library
Business Units Safety Link, Aged Care Solutions, Catering, Linen, Radiology
General Services Education Resource Centre, Engineering, Environmental Services, Financial Services, Human Resources, Materials Management, Print Shop, Payroll and Personnel, Safety, Support Services
Executive Services Community and Media Relations, Corporate Services, Fund Development, Quality

The size and location of QHSES allows it access to the range and type of equipment and facilities needed to provide complex diagnostic treatments to a wide range of clinical conditions, while the size and location of QHS allows it excellent access to a wide range of private specialist services attracted to the region, in part, to service the needs of QHSES.

5.3 INSTITUTIONAL IMPERATIVES

5.3.1 Organisational Philosophy

While studies into levels of organisational support show that promotion of EBP is not always an institutional imperative (Newman, Papadopoulos & Melifonwu 2000; Retsas 2000), an analysis of policy documentation from QHS indicates a strong organisational commitment to the adoption of EBP. Formal mechanisms put in place to facilitate the introduction of EBP have included:

- allocation to clinical managers of portfolio responsibility for the introduction of EBP amongst clinicians;
- publication of an annual report focusing on best practice outcomes achieved by the organisation, including practice review and community consultation;
- inclusion of 'Evidence-based Practice' as a Key Performance Indicator for attainment of strategic goals for QHSES;
- a requirement that program managers include EBP as a strategic goal in their programmatic planning and develop specific strategies to attain this goal;
- provision of regular on-site training on EBP;
- funding of clinicians to undertake off-site training in EBP;
- a high level of involvement in organisational research on best practice and quality outcomes;
- a decision to focus the QHSES Annual Conference (2003) on evidence-based initiatives undertaken by clinicians; and
- provision of online resources to facilitate QHSES clinician access to evidence-based databases.

In addition to the formal mechanisms identified in documentation, study participants uniformly identified that the organisational commitment to the promotion of EBP was 'big time. Flags and banners and marching bands [multi-disciplinary team member (l5)]'.

The vast majority of QHS interview participants believed that organisational commitment played a crucial role in heightening awareness about EBP and in increasing the potential for its uptake. At

QHS, the general assessment was that there was a strong commitment to EBP and an expectation, by management, that practitioners apply evidence to their practice:

> Our manager wants evidence. No analogies, no gut feelings. There's no 'It sounds like', they want to see the numbers. And that's true for all the decisions. So our team's already had to think like that and our staff on the ground who want more staff and believe that they're stressed or whatever… Staff are battling with (this manager) over what the data says and that sort of thing. Because this person is very much a data person…And also we are given time to actually, you know, do EBP. I have time to talk to you and I have been told, as part of our accountability element, 'look at fostering an evidence based practice for allied health' and the education sessions and so forth [occupational therapist (y4)].

Participants did identify that the time commitment required to become involved in many of the initiatives advanced by the organisation was problematic, given the requirements of meeting clinical workloads. This was the central resource issue identified by staff as impacting on their capacity to operationalise the organisational philosophy around EBP. There was a general acknowledgment that, despite an organisational commitment to EBP, a lack of time allocation did constrain its attainment at the operational level.

> This organisation is encouraging towards it but I think, for all the pushes and the evidence based work that is being done here, the work is still sort of very stressed in trying to juggle that with clinical work. It's hard to find a balance there… if you get the balance it could be a really motivating part of what you're doing. To know what you have found out about this and you can present that to others as something new and know that you've helped instigate a new sort of practice… but if you want to do that you've got to do that on top of your clinical work [occupational therapy (j5)].

5.3.2 Resourcing

No concerns were raised by participants on resourcing of professional development for EBP; the promotion of a research culture across the organisation; online and library databases availability; and/or collegiate and managerial support for the use of EBP. These were all identified as important organisational initiatives, although the time constraints faced by most clinicians moderated their benefit. Despite the strategies in place to support implementation of EBP at QHS, all participants, regardless of discipline area, identified that the gap between organisational philosophy and time allocations remained a deterrent to uptake.

> I think everyone's going to have said time [is the major resource issue]…we're very much informed about what's out there, where to research or the technology that's out there to get on health channel data bases. We're all very much aware but the time that that takes… In the ideal world you would just take each patient and go and research their needs… but it just doesn't happen [speech therapist (i5)].

5.3.3 Structure and Location

All interview participants assessed the organisational structure of QHS as having a positive impact on their capacity to implement EBP. A strong middle management level incorporating staff with portfolio responsibility for EBP, meant that many administrative aspects of EBP could be undertaken by those with a specific time allocation. Examples of these administrative aspects included negotiating for training opportunities; seeking avenues to promote EBP at departmental, discipline, and team levels; and following up on resource shortages that limited clinicians' implementation of EBP. All participants acknowledged that without this structural support uptake potential would be truncated. The following is illustrative of the general view of the pivotal link between organisational support and uptake of EBP:

> If I look at the structure here, there's plenty of management in there, middle management and they do quite a lot of project work…they're looking at more kind of nebulous things which includes evidence based practice and because they spend time doing it and they feel that that's important they then support clinicians in doing it. Maybe in a small organisation or one that didn't have as much of that management level, it's much more about just getting the work done and maybe a different focus yeah [physiotherapist (a5)].

Management support was important, therefore, for resourcing EBP and enhancing the development of an evidence-based agenda. The fact that middle managers at QHS were also clinicians was important in creating what Ferlie, Barton and Highton (1998, p. S27) refer to as 'clinico-managerial hybrids' with clinicians taking a lead role in introducing uniform notions of EBP.

The size and location of QHS supported its capacity to allocate middle management resourcing for EBP. QHS serves a large population, requires a large infrastructure, is close (approximately 100 km) to a major capital city, and has good transport options. Its provincial city status and location offers its practitioners access to resources and professional development at a level commensurate with metropolitan-based practitioners.

> I feel as though there's really nothing that I would want that I couldn't get. And as well as that, because (site A) is quite close to Melbourne, when there is seminars and things run, it's never

> been a problem to go down for those. Literature and things like that are available as well as access to seminars…I've never had a problem getting my hands on anything I've needed. I think it's really good within this organisation. I think with geography, it would get more difficult in more rural areas [dietician (x4)].

In fact, although QHS is classified as a rural location under the ARIA classification system, when interviewees were asked how the rurality of QHS impacted on their capacity to adopt EBP, the general consensus was that it was 'no different to metropolitan' [occupational therapist (j5)].

QHS practitioners felt that their location meant that they could—and should—adopt EBP to the same degree as their metropolitan counterparts.

5.3.4 Institutional Imperatives: Summary and Discussion

Data from the study site identifies QHS as an organisation in which the potential to adopt EBP was strengthened by a number of key factors. These include:

- The level of organisational support provided, and the development of an evidence-based practice management agenda. The literature consistently supports the assessment that strong organisational imperatives strengthen practitioner capacity to adopt EBP. Research into the role of the organisation identifies this support as pivotal in determining successful uptake (Angus, Hodnett & O'Brien-Pallas 2003; Ashburner 2001; Atheron 2000; Dunning 2000; Ferlie et al. 2001; Ferlie & Shortell 2001; Gosling, Westbrooke & Coiera 2002; Hart & Hazelgrove 2001; McCluskey & Cusick 2002).

- Provision of resources specific to facilitating the uptake of EBP (such as professional development and online database access) and the existence of a level of middle management level to absorb the administrative aspects of EBP. The staffing of this middle management level by clinicians was assessed as critical in actively encouraging uptake by health practitioners. The work of Ferlie, Barton and Fitzgerald (1998) examines and promotes the role of middle management clinicians in enhancing uptake of EBP. Further, extensive work has been undertaken on the importance of organisational resourcing in increasing levels of practitioner uptake of EBP (Bilsker & Goldner 2000; Hart & Hazelgrove 2001; Newman, Papadopoulos & Melifonwu 2000; Retsas 2000; Rubin et al. 2000). These findings, therefore, reinforce assessments by participants of the importance of introducing the type of organisational imperatives in place at QHS to enhance the capacity for successful implementation of EBP.

- The location and size of QHS. This was assessed as neutralising the inhibiting effect of 'rurality' on EBP uptake. Very little work has assessed the specific influence of the rural/metropolitan differential on levels of EBP uptake by members of multi-disciplinary teams. However, the body of work is growing on the impact of rurality on uptake (McCarthy & Hegney 1998; McDonald 2001; McDonald & Smith 2001; Taylor et al. 2001, 2002) and suggests rurality has a marked impact on uptake levels. The assessment by QHS practitioners that their location ensured they were not disadvantaged in accessing pivotal EBP supports reinforces that there is a strong belief at the regional level that rurality does have an impact. It is important to note that QHS practitioners, while based in a regional centre provided services to isolated parts of this region and were cognisant of the constraining elements of geographical and professional isolation.

From an organisational perspective, the key issue identified in the questionnaire and the interviews as affecting uptake was time availability. This confirms previous work on the influence of time constraints across all discipline areas as an inhibitor to adoption of EBP (Bennett et al. 2003; Crisp 2004; Dysart & Tomlin 2002; McCluskey 2003; Metcalfe et al. 2000; Pollock et al. 2000; Sheldon & Chivers 2000; Swinkels et al. 2002; Taylor, Wilkinson & Blue 2001; Turner & Mjolne 2001; Welch 2002). In line with these findings, this resource constraint was assessed as compromising the impact of other implementation strategies introduced by QHS.

While this finding might imply that resourcing issues predominantly influence uptake levels, an analysis of parallel themes emerging in data coding negates this, as is discussed in the following subsections.

5.4 DIVERGENT KNOWLEDGE: DISCIPLINARY DISPARITY & EBP

Data presented in this section focuses on identifying existing differences in practitioner knowledge of EBP within and across disciplines. The impacts of training and length of practice of the QHS practitioners and their attitudes to the evidence-based movement are examined. While some work has been published identifying barriers and motivators for EBP uptake by various health practitioners (Bedregal & Ferlie 2001; Ferlie et al. 2001; Pollock et al. 2000), the presentation of the QHS data is unique in providing a detailed examination of both the knowledge levels and discipline-specific diversity issues that influence the adoption of EBP in multi-disciplinary teams.

To this end, the following subsections involve an analysis of participant feedback in relation to:

- practitioner knowledge and definition of EBP;
- levels of knowledge and attitudinal diversity in relation to EBP;
- length of practice and the ways in which this factor contributes to difference, in practice settings, in practitioner knowledge of EBP; and
- the influence of variations in discipline training on practitioner knowledge of EBP

5.4.1 Knowing and Defining EBP

The level of practitioner knowledge of EBP was assessed quantitatively and qualitatively using method specific data clustering. The structure of this clustering and the grading scales used for assessment of questionnaire responses have been outlined in chapter 4.

Practitioner knowledge of the terminology and concepts of EBP

Results from the questionnaire data on practitioner knowledge of the terminology and concepts underpinning the evidence-based movement are set out in Table 16. The results indicate the majority of QHS practitioners scored consistently in the medium-to-high range on their knowledge of the concepts and terminology characterising the evidence-based paradigm.

Table 16: Level of knowledge of the terminology and concepts of EBP (QHS)

HEALTH DISCIPLINE		**Low**		**Medium**		**High**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	3					100	3
Nursing	40			82.5	33	17.5	7
Social Work	6	17	1	83	5		
Psychology	7			57	4	43	3
Physiotherapy	10			70	7	30	3
Occupational Therapy	12			50	6	50	6
Dietetics	7			57	4	43	3
Speech Pathology	8			50	4	50	4
Podiatry	4			50	2	50	2
Prosthetics/Orthotics	6	17	1	50	3	33	2
Exercise Therapy	2			100	2		
Total numbers/overall Percentages	**105**	**2**	**2**	**67**	**70**	**31**	**33**

The level of knowledge was greatest in medicine (100% of participants rated high), and lowest in social work (100% rated between low and medium). However, the total number of participants who rated low for this questionnaire item was very small, with 98% of participants having an average to high level of knowledge of the meaning of the term ‘evidence-based practice’.

Practitioner knowledge of the evidence-based hierarchy

Given the centrality of evidence hierarchy to EBP, the questionnaire sought to test the extent to which a general knowledge of the concepts and terminology of EBP translated into knowledge of types of evidence and the ability to differentiate between them. An ability to identify and rank evidence in line with the NH&MRC hierarchy of evidence was assessed as being indicative of a higher-order level of knowledge of EBP because it required the practitioner to move from knowledge of the general terms used for EBP to knowledge of more complex and specific elements of the evidence-based paradigm, as applied in the health sector.

The analysis of questionnaire data on knowledge of the evidence hierarchy highlights a decrease in knowledge levels across an increased number of QHS health practitioners, when compared to the results on knowledge of EBP theory and terminology. Table 17 outlines these results and shows that medicine, psychology, and physiotherapy have the highest level of knowledge of the NH&MRC hierarchy, while nursing, social work, podiatry, and prosthetics/orthotics have the lowest.

These data indicate that as the assessment of knowledge moves from the simple to the more complex, there is a corresponding overall decrease in both the number and the type of health disciplines possessing a more broad-based knowledge of EBP fundamentals. While 98% of QHS practitioners across all disciplines had medium to high levels of general knowledge of the fundamental concepts and terminology of EBP, only 30% were able to display a high level of knowledge of the evidence hierarchy. The number of practitioners who had no knowledge represented a third of the questionnaire sample at 33% (n=35).

Table 17: Knowledge of the EBP hierarchy of evidence (QHS)

HEALTH DISCIPLINE		**No Knowledge**		**Medium level knowledge**		**High level knowledge**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	3					100	3
Nursing	40	57.5	23	35	14	7.5	3
Social Work	6	17	1	83	5		
Psychology	7			14	1	86	6
Physiotherapy	10			20	2	80	8
Occupational Therapy	12	16.5	2	67	8	16.5	2
Dietetics	7	43	3	14	1	43	3
Speech Pathology	8			37.5	3	62.5	5
Podiatry	4	50	2	50	2		
Prosthetics/Orthotics	6	50	3	50	3		
Exercise Therapy	2	50	1			50	1
Total numbers/overall Percentages	**105**	**33**	**35**	**37**	**39**	**30**	**31**

Practitioner knowledge of evidence availability in their own discipline area

The next questionnaire item related to practitioner knowledge of evidence availability. It required participants to identify what they knew about the availability of evidence specific to their own discipline areas. Seeking this information was established as the next phase of the knowledge testing continuum—moving from the descriptive (basic terminology and concepts) to more general notions of evidence (evidence types within the evidence hierarchy) to specific notions of evidence (evidence specific to discipline areas).

Results indicate that 81% of participants had a high to medium level of knowledge of evidence specific to their field of practice, while the trend toward higher levels of knowledge was consistent within the disciplines of medicine, psychology, and physiotherapy, and consistently less common in disciplines such as social work.

As noted in chapter 2, social work practice models hold a distinctly different worldview of the role of research evidence. The primacy of this perspective appears to be supported by the results outlined in Table 18, which show the maintenance of a trend toward higher levels of knowledge among disciplines from a more positivist tradition.

Table 18: Knowledge of availability of evidence in own discipline area (QHS)

HEALTH DISCIPLINE		**Low**		**Medium**		**High**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	3			67	2	33	1
Nursing	40	27.5	11	30	12	42.5	17
Social Work	6	67	4	16.5	1	16.5	1
Psychology	7					100	7
Physiotherapy	10			50	5	50	5
Occupational Therapy	12	25	3	42	5	33	4
Dietetics	7	14	1			86	6
Speech Pathology	8	25	2	37.5	3	37.5	3
Podiatry	4			100	4		
Prosthetics/Orthotics	6	50	3	33	2	17	1
Exercise Therapy	2			50	1	50	1
Total numbers/overall Percentages	**105**	**23**	**24**	**33**	**35**	**44**	**46**

The final variable considered EBP knowledge related to an examination of levels of practitioner skill in using evidence in a practice setting. This was included as relevant to measuring practitioner knowledge levels because it represents the capacity of the QHS practitioner to move from a theoretical to a practical knowledge base.

Knowledge of EBP application skills

Questionnaire-based testing of practitioner knowledge of the skills required to apply EBP in practice found that the majority of disciplines encountered some level of difficulty in practical implementation of EBP. Overall, as with previous trends, medicine, physiotherapy, and psychology rated better in their knowledge of the application skills necessary for EBP adoption; however, as depicted in Table 19, there is an overall increase in the number and type of disciplines encountering difficulty in understanding this process.

Written questionnaire feedback identified skill development as an area in which practitioners believed that they needed additional training and support.

Table 19: Application skills and EBP (QHS)

HEALTH DISCIPLINE		**Low**		**Medium**		**High**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	3	33	1			67	2
Nursing	40	50	20	20	8	30	12
Social Work	6	33.3	2	33.3	2	33.3	2
Psychology	7			14	1	86	6
Physiotherapy	10	10	1	40	4	50	5
Occupational Therapy	12	25	3	50	6	25	3
Dietetics	7	29	2	14	1	57	4
Speech Pathology	8	75	6	12.5	1	12.5	1
Podiatry	4	50	2			50	2
Prosthetics/Orthotics	6	67	4	33	2		
Exercise Therapy	2	50	1			50	1
Total numbers/overall Percentages	**105**	**40**	**42**	**24**	**25**	**36**	**38**

Interview data on practitioner definition of EBP

Interview data provides a strong cross-referencing point for questionnaire findings on practitioner knowledge of EBP. While the questionnaire focused specifically on assessing levels of knowledge, the interview process asked participants to provide their own definition of EBP rather than ticking a pre-coded category. Results reinforce questionnaire results: higher levels of specific knowledge are prevalent in the definitions provided by disciplines from a more scientific tradition. Examples of this can be found in statements such as:

> Well it's evidence from well conducted clinical trials… information collected through collation of papers which indicate the efficiency of one form of treatment against another and have

> identified that which is proven to be the best, probably through meta-analysis [medical practitioner (d1)].

> I would define evidence-based practice as the utilisation of randomised controlled trials or systematic reviews of a clinical intervention that would guide my practice as a clinician [physiotherapist (f1)].

The definitions provided by the majority of disciplines lack the level of specificity displayed in the responses of medicine and physiotherapy:

> I think it's using techniques that have been tested or proved to be effective and I consider it to include stuff that I haven't necessarily read as effective but other staff or my seniors use it as effective therefore I have adopted some of their strategies [occupational therapy (g1)].

Consistent with questionnaire data, there were practitioners within the nursing and social work disciplines whose responses indicated they were still struggling with the notion of EBP. The following statements provide evidence of this:

> It's a very good question. I think within the health field, there's a push for more of what we call evidence-based practice. I'm not sure clearly what the definition of that is [social work (r1)].

> I have absolutely no idea, I've never actually heard of it before nor have I read anything on it so therefore I would just be making a big guess as to what I thought it was actually all about [nurse (j1)].

In summary, both qualitative and quantitative data indicate that while the vast majority of QHS practitioners had some knowledge of the meaning of the term EBP, there were differences between disciplines in regard to the depth of that knowledge.

5.4.2 Knowledge and Attitudinal Diversity

Practitioner attitudes to EBP were canvassed through the questionnaire using a 14-point response structure, as outlined in the methodology chapter. These quantitative data found that, regardless of differences in knowledge levels, the attitude to EBP among QHS practitioners was generally positive. The vast majority of disciplines at QHS rated the notion of using evidence to inform practice decisions as an approach likely to be beneficial to health service delivery. These results are detailed in Table 20.

The propensity to rate EBP as positive for practice was less common in the disciplines of social work and prosthetics/orthotics. This parallels the results on EBP knowledge levels: the QHS disciplines whose responses identified lower levels of knowledge had higher representation in ratings on negative attitudes toward EBP.

Table 20: QHS Practitioners' attitude to the concept of EBP

HEALTH DISCIPLINE		**Negative**		**Positive**	
	Total n	**%**	**n**	**%**	**n**
Medicine	3			100	3
Nursing	40	15	6	85	34
Social Work	6	50	3	50	3
Psychology	7			100	7
Physiotherapy	10	10	1	90	9
Occupational Therapy	12	8	1	91	11
Dietetics	7			100	7
Speech Pathology	8			100	8
Podiatry	4			100	4
Prosthetics/Orthotics	6	33	2	67	4
Exercise Therapy	2			100	2
Total numbers/overall Percentages	**105**	**12**	**13**	**88**	**92**

Given these findings, it is important to gain an understanding of the extent to which different disciplines actually used evidence to inform their practice. Questionnaire data, as shown in Table 21, identified a high level of usage of evidence overall by the QHS practitioner, with between 67% and 100% of all participants across all discipline areas using evidence on a daily to weekly basis. This finding would appear to be at odds with data on knowledge of EBP; however, it is important to point out that this is a complex variable to assess. While the statistical data are able to identify frequency of use of evidence, the type of evidence used varies between practitioners. This means that while 100% of practitioners from medicine and podiatry were identified as frequent users, the questionnaire provide no insights as to whether the two disciplines used RCTs 100% of the time, or whether they used evidence types at opposite ends of the evidence hierarchy.

While the figures provided in Table 21 appear to indicate a high level of EBP usage at this study site, content analysis of interview data confirms the fundamental differences in the type of frequently used evidence.

Table 21: Frequency of use of evidence to inform practice (QHS)

HEALTH DISCIPLINE		Non-Users		Infrequent Users		Frequent Users	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	3					100	3
Nursing	40	7.5	3	7.5	3	85	34
Social Work	6	33	2			67	4
Psychology	7			14	1	86	6
Physiotherapy	10			10	1	90	9
Occupational Therapy	12	8	1	25	3	67	8
Dietetics	7			14	1	86	6
Speech pathology	8			12.5	1	87.5	7
Podiatry	4					100	4
Prosthetics/Orthotics	6	33	2	67	4		
Exercise Therapy	2					100	2
Total numbers/overall Percentages	**105**	**8**	**8**	**13**	**14**	**79**	**83**

Key sources of evidence varied according to discipline. RCTs and systematic reviews were identified by all the medical practionners as their key source of evidence; journal articles and conference proceedings were identified by all occupational therapists; articles, colleagues, and protocols were used by six out of seven of the nurses, while three of the four social workers cited clinical experience/practice wisdom as the evidence type they used most frequently. These differences highlight the diversity that exists in relation to EBP at the QHS site and reinforce the importance of qualitative data in clarifying individual practitioner perception on EBP.

5.4.3 Knowledge, Definition, and Attitudes: Summary and Discussion

QHS data on knowledge, definition, and attitudes portrays a health workforce generally supportive of EBP but whose knowledge levels and perceptions as to the applicability of EBP to practice are marked by discipline-specific variations. Many of the findings emerging from this theme reinforce existing knowledge about a number of issues:

- Disciplines from a more scientific tradition had a greater knowledge and understanding of EBP than those operating from a humanist perspective. This finding essentially parallels previous studies on the knowledge held by different disciplines about EBP (Cochrane 1999; Cabana et al. 1999; Dawes et al. 1999; Ferlie et al.1999; Gambrill 2003a; Hemming 2000; Jordan & Jordan 2000; Retsas 2000; Sackett et al. 1996; Shaw 1997; Sheldon 1998; Upton 1999a; Webb 2001) and provides no new discipline-specific knowledge about EBP. The findings are unique, however, in that they confirm, for the first time, that knowledge variations exist within a single

health service team, despite all members operating under a strong organisational imperative for uptake of EBP.

- All health disciplines signalled the need to further develop skills in using EBP. While proficiency levels varied, there is a consistent theme within the data that the process for practical application of EBP remains difficult. This finding is in line with existing research for medicine (Doust & Silagy 2000; McAllister et al. 1999; Straus & McAllister 2000); nursing (McKenna, Aston & Keeney 2004; Newman, Papadopoulos & Melifonwu 2000; Retsas 2000; Upton 1999a); allied health (Dysart & Tomlin 2002; Green et al. 2000; McCluskey 2003; Singleton 2002; Welch 2002); and social work (Gambrill 2003b; Howard, McMullen & Pollio 2003; Swinkels et al 2002).

- Health disciplines, with few exceptions, viewed EBP positively and considered it to have the potential to enhance health outcomes. Studies by Dowswell, Harrison and Wright (2001), Guyatt et al. (2000), McColl et al. (1998b), Mayer and Piterman (1999), Pollock et al. (2000), Taylor et al. (2002), Tracy, Dantas and Upshur (2003), and Upton (1999a) had similar findings, while the works of Jordan and Jordan (2000) and Webb (2001) are illustrative of the negative views of a proportion of social workers to the evidence-based movement. While these studies validate the results of this study, it is important to highlight they were, in the main, attitudinal studies focusing on individual discipline areas. This study expands available insights by enabling positive and negative attitudes to be mapped at the inter- and intra-disciplinary levels, while reinforcing themes identified previously in single-discipline studies.

The dominant trend to emerge in the previous section is that practitioners from a more scientific tradition better understand the EBP paradigm and, correspondingly, are more likely to view EBP as beneficial to practice. The logical conclusion in an initial analysis of this trend is that the more you know about EBP (both theoretically and practically), the more likely you are to adopt it. Scientific disciplines know more about EBP and consequently use it more—a conceptualisation of findings which marks knowledge as a central enabler to uptake of EBP. This proposition reinforces the linear knowledge/uptake model discussed in previous chapters that underpins many contemporary approaches promoting EBP training in health practice (Bilsker & Goldner 2000; Di Censo et al. 2000; Dunning, 2000; Oxman et al. 1993, 1994).

While this assessment is defensible within the context of fixed-choice-response questionnaire data, it is challenged when considered against the responses to open-ended questions within the questionnaire. These responses yielded additional data, which revealed that knowledge of EBP is

often linked to the extent to which practitioners consider evidence to be relevant to their particular practice model and the context in which they work. Written feedback—such as 'Not all human behaviour can be reduced to evidence, especially as the available evidence is offering samples purporting to be generalisable to all contexts and needs when it isn't', and 'I feel that each case is unique and individual needs vary in each case. This is what informs my decisions and drives my practice…and supersede the evidence', and 'Many of the skills/competencies used in social work are not able to be tested through an evidence-based approach'—suggests that practitioners consider contextual, disciplinary, and individual client issues as well as clinical experience over knowledge *before* seeking evidence—a conclusion in line with findings of previous studies (Ferlie, Wood & Fitzgerald 1998; Freeman & Sweeney 2001; Hayes & Haines 1998).

These data signal that assuming a linear relationship between levels of knowledge and uptake in the practice context is simplistic. While knowledge levels must be considered a factor in determining degree of uptake, the written feedback suggests a complexity far beyond this linear assessment. This is consolidated by interview data, which reinforces that uptake of EBP within the multi-disciplinary context is dependent on a variety of interrelated aspects of practice. These span disciplinary, inter- and intra-disciplinary, as well as organisational domains, and play a primary role in determining uptake of EBP by QHS practitioners.

5.4.4 Inter- and Intra-Disciplinary Training Diversity

Interview findings strongly support the proposition that there is a direct link between initial, formal, discipline training and how applicable EBP is considered to be by practitioners of these disciplines.

> One of the things that struck me…is that we are all coming from a different kind of training. My training was very science-based and the practical side of things came in toward the end of my training, whereas…I think other disciplines see things much more immediately …in nutrition we don't get things like that. We see things differently as a result of our training and that really shapes where we go with things [dietician (s1)].

It is important to note that initial formal training is classified differently to that provided through short-term professional development activities about EBP. Initial formal training involves a consolidation of discipline-specific knowledge, peer support, discipline philosophy, and a professional worldview (Bilsker & Goldner 2000; Cott 1997, 1998; Howard & Jenson 1999; Milligan et al. 1999). As such, it is significant in shaping practitioners' practice approaches and the extent to which they view particular methods as integral to daily practice (Angus, Hodnett & O'Brien-Pallas 2003).

All interview participants across all disciplines identified the pivotal role played by initial formal training in determining levels of conversance with EBP—regardless of the level of access to post-qualification professional development. The following observation describes effectively the assessment of the primacy of initial formal training on shaping discipline views about EBP:

> I think it's probably based in our training. I don't know whether it's related to length of training, or whether it's related to the way the training is done at undergraduate level. Because I think it's at that adolescent level of our development that we really start to form our beliefs in things. I see, personally, and this is my bias, I see evidence-based being very strong in the medical profession, less strong in nurses. I see it pretty strong in the allied health like speechy's and occupational therapists and physiotherapists are pretty strong. I see it less strong in social work. I see it variable in psychology, depending on the strictness of the supervision… So the different disciplines, I see as being a bit different [psychologist (n4)].

When assessed against initial formal training, EBP was found to sit more comfortably with the practice models of some health disciplines over others:

> Because it is strongly stressed throughout the training that we follow the scientist/practitioner model. That's a term that's used over and over again in psychology - the scientist/practitioner model… In supervision, I have often been asked 'why do you think that, where do you get that from, what makes you think that if you use this particular type of treatment, what makes you think that your diagnosis is correct, how could you prove that?'. So there is a scientific slant on a lot of what we do [psychologist (i2)].

> I think the push is very, very strong in physiotherapy… there's a strong commitment from both the APA and from the clinical schools, in universities, to support evidence-based practice as a core aspect of our discipline… physiotherapy, particularly in the first 2 years, has historically followed a strong medical model in the way that we're trained… So that became an expectation [physiotherapist (w1)].

The extent to which disciplines identified EBP as a core aspect of their initial training uncovered the first fundamental disciplinary difference in the QHS multi-disciplinary practice environment. While a number of discipline areas discussed the importance of EBP in their initial training, medicine and physiotherapy were unique in that all practitioners interviewed from these disciplines were able to link their conversance with EBP to the centrality of evidence in the medical model advanced in their training—regardless of the time passed since they had trained.

> I mean that's where evidence-based medicine emerged… It's a very powerful tool in medicine and I think everybody uses evidence-base, the language is 'Oh yes, well this is according to best practice and this is evidence-based' 'this is the way it should be' [medical practitioner (u1)].

QHS practitioners from these discipline areas, as part of their development as professionals, began practice with a level of familiarity with EBP that was only beginning to emerge for the practitioners in many of the other disciplines.

In direct contrast to the medical and physiotherapy practitioners, all social work practitioners interviewed identified that EBP was missing from their initial formal training and acknowledged that this had played a significant role in shaping their perceptions of its relevance.While no social worker argued that EBP should have been part of their initial training, it was felt that its absence reflected an incompatibility with the social work philosophy and the practice models under which they operate. This parallels the argument put forward by a number of social work writers who oppose EBP for social work practice (Jordan & Jordan 2000; Shaw & Shaw 1997; Webb 2001).

> There was no such thing as evidence-based practice (in my training)…it makes it much more difficult to document (and use evidence) in a scientific way when you don't have that as the premise of your profession. The theories that we build the profession on are very much around the clinical experience of people, and you've got constantly a whole range of theoretical perspectives evolving and people's different clinical experience takes off in different tangents and they refine, and develop those and know; 'this works in a particular setting for this particular group of people', or it might be across a whole range of people, but not everybody uses the same techniques in the same way [social worker (q4)].

The ways in which these differences manifest in regard to inter-disciplinary relationships will be explored in subsequent subsections of this chapter. The power that diversity in training has in creating variations in discipline-specific perceptions of EBP is effectively encapsulated in this statement from a QHS medical practitioner.

> I think actually, it's almost counter intuitive to some extent. I think that we've moved. I think we have the maturity in medicine about evidence base … we're circumspect about it in relation to individual patient management and so, while the evidence base is a means of informing about standard practice and you can try and do that, you always have to modify that on the basis of other risk factors which would never be considered in any evidence-based randomised control population. So I think that modifies it. Whereas I think other professions might just adopt it (there is a level of discernment in medicine that may not be there with other disciplines) [medical practitioner (p4)].

The conversance of medicine and physiotherapy with EBP was also identified as being linked to the perceived maturity of these professions, and their professional associations in working with EBP. In line with findings of previous studies (Haines & Jones 1994), the stance of the professional association was viewed as a facilitator in the translation of formal training philosophies to the practice environment.

> So, I think the uptake for the professions that are closer to medicine is much stronger. I think it is also a lot to do with the strength of the professional associations. Eg. the Physiotherapy Association has 10,500 members, and we pursued guidelines because that was the right thing to do for the profession. Speech pathology is coming that way a little bit, but I think most of the other associations are not very far along. All professions have an association behind them but, to some degree the maturity of an association says that they will at least give it a try [physiotherapist (y2)].

There are a significant number of early-career practitioners at QHS, with the majority (60%) of study participants having practised for less than 10 years. This provided QHS with a staffing profile significantly weighted toward practitioners with a more contemporary training background and a correspondingly greater level of familiarity with EBP. Practitioners themselves identified a link between length of practice and application of EBP, with the intra-disciplinary differences in training in EBP, as perceived by interview participants, summarised in the following statements:

> Not when I trained (14 years ago) …I think that sort of came in the last, you know, sort of 5 years probably. Certainly when I trained it was just 'these are the sort of methods that are used' and you know, various places used different sorts of techniques for various reasons, because people like them I suppose. But there wasn't a great deal of, you know 'this is the right sort of thing to do because there's been research to support it' [occupational therapist (t1)].

> My training goes back about 15 years and it was a very traditional training. Very little evidence-based practice was around in those days … and so, historically it's been a sort of manufacturing … People in the past who were technically a lot more competent than what we are now. They could make all sort of intricate things. Now, the education of our field is much more orientated towards clinical expertise, and the field is also moving towards clinical people [prosthetics/orthotics (b2)].

While the need for ongoing professional development to maintain skills in applying EBP and explore and access information about new evidence was identified in written questionnaire feedback and in interviews, QHS practitioners from all disciplines proposed that high levels of cognisance of the role of evidence in practice was fundamentally related to the extent to which the philosophy of

initial discipline training presented EBP as an integral aspect of service provision. An example of this belief is found in statements such as the following:

> I think particularly as I've only been out a couple of years and it was very much drilled in at the university level so I've gone through and studied with the evidence-based practice band wagon whereas I think probably people who have been out longer it's quite a challenge and they don't get the jargon…so maybe that's the benefit of having less experience because you're sort of, it's been there since the day you started [speech pathologist (v1)].

> Sometimes podiatrists who have been practicing for 15 years, you know are in the groove of their job and don't necessarily care as to whether they're, you know undergoing evidence-based practice because they rely totally and 100% on their clinical experience because this is what they've done 10 years ago. It worked for 10 years so let's keep doing it. Whether that's backed up or not in the literature, whereas the new graduates…they're coming out with a much stronger perception of where the journals are, what papers are coming out…Because they're totally up with the most current knowledge, they're most likely to go and seek the evidence more so than someone who has 15 years experience [podiatrist (j1)].

The impact of clinical experience on EBP uptake was examined by Dysart and Tomlin (2002) who identified that occupational therapists with more than 15 years experience were less likely to find EBP to be applicable to their practice.

The fact that EBP is increasingly being included in the initial formal training of many health disciplines impacts in two distinct and contradictory ways. On the one hand, it has meant that an increasing number of health practitioners at QHS had a functional knowledge of EBP derived from initial training. On the other hand, it created inter- and intra-disciplinary differences at the QHS site in terms of EBP knowledge according to the practitioner's length of practice. Excluding the disciplines of medicine, physiotherapy, and social work, intra-disciplinary differences arising from variations in the content of their formal training were found in all disciplines, with the recently trained practitioner more likely to view EBP as an integral part of practice.

Nursing at QHS provides an excellent site example of the extent to which training diversity shapes practitioners' worldviews on EBP.

Nursing at QHS: A site example of intra-disciplinary training diversity

Nursing training backgrounds amongst interview participants at QHS can be classified under three distinct sub-groups:[1]

One: Nurses trained in hospital environments

Two: Nurses trained in a university setting

Three: Nurses trained in hospital settings who later returned to undertake postgraduate or bridging training through a university.

The training backgrounds of interview participants are outlined in Table 22. The questionnaire did not provide a mechanism for identification of training types.

Table 22: QHS nurse training profile: interviewed staff

Nurse	Hospital Trained	University Trained	Dual Training
One	√		
Two			√
Three		√	
Four			√
Five	√		
Six	√		
Seven			√

This diversity in training backgrounds resulted in significant variations in the perceptions of nurse participants on the role of EBP, which is in line with the work of Nilsson Kajermo et al. (2000) and Olade (2003) on the link between education levels and nurse perceptions of the place of EBP in practice. Of those interviewed, only one participant identified a strong link between their initial formal training and EBP, although half the remaining participants had undertaken either bridging or postgraduate training and stated this had played a role in modifying their view on the use of EBP.

The extent to which the nurses at QHS were working in a disciplinary environment in which there were different perceptions of the role and value of EBP is captured in the following comparison of comments by QHS nurses:

[1] Nursing in Australia has undergone a change in focus since 1984 when nurse training moved from a hospital-based apprenticeship model, in which nurses developed skills through intensive 'hands-on' training at a specific hospital, to tertiary training in a university system. This transition was completed in 1994 with the new system requiring candidates to gain a Bachelor of Nursing qualification that comprised academic and practice aspects across a series of hospital placement experiences (Kenny & Duckett 2003).

> I think it's a very fine line between art and science. I think you know they're both very close but I don't see nurses adopting things into practice that people have done for years and years and have justified. I think they go off now and look and see what is the best evidence… they're asking more questions about why they're doing something so I believe that science actually drives them, their practice a lot more…I guess I'm being a little bit pie in the sky when I say that I think it's very slowly moving towards (EBP), I see very little, little of it being done, I feel that there should be a lot more of it done and I think we should be somehow building it into our work practices [nurse (y1)].

> If they're going to use evidence-based approach, it also needs to follow their intuition, you know, that gut feeling about things and I think a lot of people can't see past their own practice. So I think you've got to feel that it's going to be a benefit to use it. That it fits with your way of thinking and doing things. Because, really, I think nurses are shocking with change, basically, so they often won't be convinced [nurse (s4)].

The role of the nurse, as established and maintained through traditional forms of training, also impacted on inter-disciplinary perceptions of the extent to which nurses used evidence in practice. While not all practitioners interviewed at QHS articulated this view, a third of the non-nursing interview participants classified nursing as a profession with weaker links to the use of evidence due to their training and discipline philosophy as a 'caring' profession—a sentiment effectively captured in the following statement:

> Nursing have a Nursing Practice Committee and I don't think that's a very mature profession in terms of evidence-based practice. Again, nursing is fairly, contrary to what they would say, is a caring profession, not a science profession, and I don't think they really will have a strong grasp of how evidence applies to them [physiotherapy (z3)].

Regardless of training background, all QHS nurse participants articulated training as an influence on how nurses perceived their role in the practice setting and how readily they were able to accommodate EBP in their practice. The traditional view of the nurse's role in the health service sector, and how this has changed over time, was a point of discussion among QHS participants in relation to EBP:

> Basically a nurse was a nurse basically. We dealt with pans, we dealt with vomit, we catered to the doctors and I think it's only now that the students actually going through the university, etc where they're more of an individual, got more of an upstanding view on things and I think things are changing from that point of view although obviously with many years with nursing

> and whatever I've certainly changed my opinions to when I first trained and I don't perceive it now as anything but dealing with the science field yeah [nurse (j2)].

Interview feedback was illustrative of a discipline still working toward resolving the challenges created when nurse training moved from a hospital to a university environment, where the training emphasis shifted from the 'hands-on' focus of the ward to the academic focus of the tertiary classroom.

> Nurses who have been trained through the university system probably readily agree to that (EBP) a lot quicker than us oldies…being hospital trained it was really like an apprenticeship, you got in and you did what you were told and this is how you did it and you didn't really go into the huge background of why and wherefore… now you actually go off and you find out more whereas in the old days when we were training it was more of a job. It wasn't a career really thirty years ago nursing was something to do for a while and then you got married and had kids and so it has changed [nurse (z1)].

This shift is particularly relevant when interview feedback around adherence to traditional treatment techniques is considered. While nursing, as a profession, moves towards greater levels of professionalism (Bonell 1999) this remains a complex and problematic process (Walker 2000), with unproven or discredited treatment approaches retaining some legitimacy as a residue from traditional practice methods (Zeitz & McCutcheon 2003). This trend was identified as impacting on the adoption of EBP at the QHS site:

> It was more 'It's done this way because it's done this way because it's done this way', whereas now the feeling is it's done this way because we've tried it and it works, or we're not doing it that way any more. We know that they've obviously done the research along the way to prove what works and what doesn't. They don't just keep doing the same thing because it's been practised for the last 20 years. I mean an example would be that, one of the nurses believed that Usol was a good product for getting rid of ulcers, so they'd soak peoples' legs in buckets of Usol, you know for up to an hour at a time, which is a really detrimental thing to do because of tissue damage, but they did that because somebody said that worked once [nurse (c2)].

QHS nurses signalled that adopting EBP required more than just knowledge about evidence. It also required practitioners to come to terms with adopting alternative approaches to practice:

> I trained in the health system 24 years ago…Look I think we were spoon fed a lot when we actually trained. Basically we knew that we were having an exam, we had a lot of paper work that was handed out to us and we referred to that. Weren't encouraged a great deal to go to the

> library to, you know seek journals etc and I think, being spoon fed it makes it a lot more difficult to actually then go out and actually sort of look that information up yourself…The students that are actually coming through now I think do a lot more of their own study, they have to actually go out and seek, they have to actually do a lot of assignments and they have to do it in a way that they've actually got to write down what text they've had to actually look up to actually get their information. Things like that. So today's students are actually more encouraged that way whereas the old students weren't [nurse (d2)].

This is particularly relevant given the fact that collegiate and supervisory influence has been identified as influencing EBP uptake by nurses (Retsas 2000; Upton 1999a). Diversity of views on EBP, informed by training diversity, has the capacity to result in difficulty in implementing EBP, in instances where supervisory staff have been trained in a different era and hold divergent knowledge about EBP.

This site example has sought to illustrate the complex nature of building a new era in treatment modalities when many of the concepts that shape and define a discipline practice are part of a different, not readily compatible, alternate era. Nursing, as with other disciplines at QHS, is undertaking the journey toward adoption of EBP in a discipline context that is rendered more complex by distinct and subtle intra-disciplinary training variations.

5.4.5 Inter-Disciplinary Training Diversity: Summary and Discussion

Data analysis also signals that the variability in how QHS practitioners constructed their view of EBP was closely linked to the most fundamental aspect of their professional socialisation: initial formal training. This socialisation influenced how practitioners conceptualised and developed their practice and also how they conceptualised the role of other disciplines within the healthcare team. The maintenance of concepts of 'semi-professional' (Davidson 1990; Cooper, Stevenson & Hale 1996; Cott 1997, 1998; Griffin 2001; Ohlen & Segesten 1998; Warlow 1996), in regard to nursing and EBP illustrates this point effectively. Importantly, the data also illustrate that professional differences relating to EBP cannot be clustered into distinct, discipline-specific categories but that they comprise a variety of inter and intra-disciplinary perspectives.

This mixture within and across disciplines of professional knowledge and views about EBP adds a further dimension of complexity to the multi-disciplinary practice environment. While extensive work has been undertaken regarding inter-disciplinary differences and how these impact on multi-disciplinary team practice (Cott 1997, 1998; Cowles & Lefcowitz 1992, 1995; Hammond, Bandak & Williams 1999; Netting & Williams 1996; Patronis Jones 1997), limited empirical work has

examined how intra-disciplinary differences within a diverse multi-disciplinary team impact on adoption of particular practice approaches—specifically EBP.

These findings have implications for implementation of EBP at all levels of health service delivery. At the policy level and from the perspective of QHS as an organisation, this finding challenges the assumptions around 'one size fits all' implementation strategies aimed at enhancing EBP uptake. From the practitioner's viewpoint, it signals fundamental differences in the extent and manner to which EBP is perceived to enhance or diminish the work of individual disciplines within the multi-disciplinary team. Locock et al. (1999) assessed that uptake of EBP within the multi-disciplinary context is often unsuccessful. The inter- and intra-disciplinary variability identified in this subsection reinforces the complexity of the issues needing to be addressed by the multi-disciplinary team working to adopt EBP. It is the practice implications of these issues that will be explored in the following subsections of this chapter.

5.5 PRACTICE LEGITIMISATION

The literature review identified that the scientific basis of EBP provides a measurable framework for validation and legitimisation of treatment decisions. Practice legitimisation within the context of this study refers to the legitimacy attributed to practice approaches, based on the extent to which treatment(s) can be shown to be supported by evidence and/or proven to have achieved measurable outcomes for clients.

In order to test the extent to which this notion held true at the QHS site, interview participants were asked whether they considered themselves to be from a scientifically focused discipline, and, while 68% of those interviewed believed that they were, analysis of interview data clearly reveals three distinct groupings at QHS in relation to science and EBP.

The first group were the disciplines that considered themselves—and were considered by others—to be closely aligned to science. These disciplines had a level of legitimacy assigned that was based on the measurability of their practice. This was true regardless of the extent to which these disciplines actually used EBP because their practice validity—by virtue of their science—was conferred automatically. This was unfailingly true for medicine and for physiotherapy—the 'scientists' of QHS.

The second group were the disciplines that were 'seekers of the science' of EBP, and included dietetics, nursing, occupational therapy, podiatry, prosthetics/orthotics, psychology, and speech

pathology. While all disciplines within this cluster considered science as a basis for practice legitimisation, they did not all consider themselves to be working in a scientifically based discipline. Additionally, there was inconsistency in the extent to which they were considered scientifically based disciplines by other practitioners within the QHS team.

The third group were the disciplines that actively resisted the science of EBP and were, in essence, from the discipline of social work. These practitioners, consistently, did not use scientific evidence in their practice and did not consider themselves or their discipline area to be scientific. Importantly, these 'resisters of science' were not considered to be scientific by their colleagues within the multi-disciplinary team.

These three groupings generally duplicate findings in the previous subsection relating to initial training and EBP. The disciplines found to have either strong, variable, or frail/nonexistent links to EBP in their professional training have been found to fit into similar groups in regard to links with science.

5.5.1 The Scientists

Disciplines such as medicine and physiotherapy communicated a synergy between their practice models and EBP. Further, as scientifically based disciplines, they isolated the link between EBP and practice application as resting in the centrality of science and scientifically measurable outcomes to the paradigm.

> To a large extent on the grounds that we apply the evidence-based approach because there is a major scientific part to it. I would say it is mostly scientifically based…and it certainly is very helpful if there's clear scientific evidence showing that one particular regime is better than another and so you would obviously use that [medical practitioner (u3)].

> Because physiotherapy is at the more scientific end of the allied health disciplines, then it is a little bit easier…to get your head around it [physiotherapist (r4)].

The assessment that these disciplines were the most scientific—and, therefore, the most proficient at applying evidence to practice—was validated by other interview participants. Ninety-five percent of all participants interviewed identified specifically that these disciplines had the strongest evidence base and were considered leaders in the evidence-based movement at QHS. It is noteworthy, however, that while QHS practitioners assessed physiotherapy practice to be based in science, research has shown that physiotherapy continues to grapple with the science of EBP. The

applicability of scientific evidence to physiotherapy practice and the potential for EBP to increase the status of physiotherapy in the health arena are issues currently debated by this discipline (Bellner 1996; Clemens 1998; Hendricks et al. 2000; Turner 2001b), and this is regardless of inter-disciplinary perceptions around the scientific nature of physiotherapy practice.

5.5.2 The Seekers of Science

Nurses involved in the interview process argued that the science underpinning EBP could potentially provide a mechanism through which to enhance and validate nursing practice. As such, nurse participants at QHS considered it a powerful tool for practice legitimisation.

> I believe that for instance when I first started nursing I did what my charge nurse told me. But I think now the nurses are going and doing their own search and coming back with different ideas and they should be encouraged to… Well I would hope that university training has changed nurses on nursing practice and that they're more scientific etc, that's what it was all intended for, it's what we *fought* for [researcher emphasis] [nurse (y1)].

This view mirrors discussion in much of the literature around the potential of EBP to enhance the professional status and quality practice of nursing (Ciliska & Di Censo 1999; DiCenso et al. 2000; Hegney 1998; McCarthy & Hegney 1998; Ray 1999). The discipline of nursing, along with other 'seekers of science' disciplines, have 'fought' to be seen as increasingly scientific. While the extent to which this has actually occurred is variable, as evidenced by previous statements around the nature of nursing as a 'caring' profession, nurses continue to work toward being perceived as more scientific. The potential for change, as represented by EBP, provides a strong incentive for nurses to adopt a scientific approach to practice by using EBP as the mechanism to improve perceptions around the validity of their practice.

Other QHS disciplines included in this cluster, such as prosthetics/orthotics and occupational therapy, identified that the historical link with science in their initial training was not strong, and they believed this had an impact on the ability of their disciplines to readily incorporate and be seen to be adopting EBP.

> Prosthetics and orthotics, historically we aren't a scientifically based area. Um, we'd like to think that we're progressing in that way, um, and we do appreciate research that is out there and we are wanting more research um, to be conducted to, to influence clinical decisions and to have that at hands reach to consider, you know making a clinical decision, but at the moment it's not, it's quite limited [prosthetics and orthotics (g2)].

> The history of the profession is definitely less scientific. Still a lot of people that don't, haven't been involved or had an OT recently, refer to it as craft activities and that sort of thing… and it gets harder, to research or be more scientific about it because they just want that person home or you've got someone else to see [occupational therapy (h2)].

These disciplines, and others in this grouping, consistently saw EBP and the science underpinning the approach, as relevant to the practice models in which they operated. They stated that, working within the medical model of practice prevalent at QHS, EBP provided a means to enhance professional standing through an expanded capacity to validate practice decisions through scientific evidence. This assessment reflects those made by writers on the potential of EBP to enhance perceptions around discipline professionalism (Bankson et al. 2001; Griffin 2001; McCluskey & Cusick 2002; Rosenwax, Semmens & Holman 2001; Sullivan 2000; Yerxa 1993), and is clearly articulated in statements such as:

> I'd say that, for me, evidence-based practice gives me confidence in what I'm doing and confidence to tell others what I'm doing, whether it's a client and family and other staff… If someone was questioning me and I'd used an evidence-based practice approach I would strongly challenge it, but, if I had more gone on just past experience or didn't have something that I really was confident in where I'd got it from it would probably really make me pull back…sometimes just because I don't have an evidence-based approach I don't challenge or question what their evidence-based approach to that is. I often have people just sort of say 'oh well she's going to deteriorate' or 'this is going to happen' or 'we should do this' or 'it doesn't really matter' but if I did have a bigger evidence base then I could, I would be definitely more confident and say 'well no, this is why I think we should do that' [occupational therapist (r2)].

An analysis of this statement emphasises the extent to which, for the seekers of science, practice legitimisation was often a non-reciprocal process. While, for this group of practitioners, EBP was considered a mechanism to support, legitimise, and equalise professional relationships in the practice environment, it was not used as a mechanism to challenge multi-disciplinary practice decisions. A significant number of practitioners were using EBP to legitimise and validate their own practice but did not use the same mechanism to seek legitimisation and validation of the practice of others. The use of EBP for individual practice validation, rather than to assess the validity of multi-disciplinary treatment decisions, was not specifically stated. It was, however, apparent in a scrutiny of the content of interview feedback on perceptions of the role of EBP.

> I had to develop a rehab program for podiatry in the rehabilitation setting so I had to prove, in a way, what podiatry did on the rehab ward. I had to prove it and EBP helps to make it more valid in the team environment [podiatrist (s2)].

> It's very interesting because within a multi-disciplinary team, I guess I'm there as a nutrition representative and I'm taking what they're saying as their professional judgement and their expertise. I guess I have only been working for 12 months or so, so I'm taking what they're saying on face value, without thinking 'well, how have they come to that conclusion?', which perhaps I should be doing. But, at the moment, I am still so concerned about making sure that I'm doing the best thing for my discipline's point of view, that I'm just accepting what they're saying to me [dietician (t4)].

This focus was particularly notable when comparing the status associated with being a 'scientist' or a 'seeker of science' in the multi-disciplinary context. The following statements provide examples of the expectation that EBP should be used for practice validation and also as the non-reciprocal nature of treatment validation from the perspective of medicine (a scientist).

> The medical staff, are the drivers of the decisions and we're more inclined to have to justify what we're doing so and look for evidence and say, 'no we don't need to do this because he's presenting a certain way and the evidence is he'll get better this way without a certain intervention', so it makes us more inclined to justify what we're doing [speech pathologist (t2)].

> Oh we forgot about the medicine haven't we … They don't tend to come to meetings that we have, they're their own little boys' club and I mean they, the evidence that they use sometimes they do, a lot of times they don't. The medical model is just so different to all the other disciplines. I know that especially in wound care and you'd think you know there's a lot of evidence out there for wound care and what's the best and some of the surgeons still go down the old, old track of using chemicals that we would never put on wounds these days but that still happens so, no, medicine doesn't follow as well (and they make the ultimate decision) [nurse(e3)].

This situation is paradoxical: those who seek science and the legitimisation it provides do so, in some instances, from those who have legitimacy based on science, even when their practices may not be based on scientific evidence.

5.5.3 Resisters of Science

The empirical evidence from social work practitioners at QHS provides significant new insights into the notion of science and multi-disciplinary practice in the health service sector. Social work

practitioners do not operate from a scientific perspective (either in training or in practice) and struggle to find the relevance of applying a scientifically driven evidence-based approach to their practice (Humphries 2003, Jordan & Jordan 2000; Munro 2002; Oakley 2000; Webb 2001).

While there is an increasing call across the discipline to embrace the notion of EBP (Dunston 2001; Gambrill 1999; Gambrill & Gibbs 2002; Howard, McMillen & Pollio 2003; Sexton 1999), social work practitioners at QHS consistently struggled to resolve how to apply a scientific concept to the non-scientific frameworks of social work practice models. Central tenets of social work practice are the notions of theoretical frameworks and practice wisdom, which are fundamentally at odds with the scientific agenda that underpins EBP in the health services sector (Swinkels et al. 2002). Statements such as the following illustrate the science/practice wisdom dichotomy faced by the social worker operating at QHS:

> Practice wisdom (drives our practice) …there would be only some, I guess some theoretical perspectives…but by and large the nature of social work has been to gather a whole range of different perspectives and to try and meld those into a body of knowledge to work from. And a lot of these are not necessarily scientifically based, and I don't think the core of social work is scientifically based and therefore it makes it much more difficult to manage [social worker (x1)].

> I think the difference is that we're, that we're not dealing with science. We're not dealing with compounds or decisions that impact in, on a different way in people. We're dealing with human issues, we're dealing with what's going on for the person, we're dealing with feelings, we're dealing with emotions that aren't prescriptive … This is something that requires an understanding of the way people operate, it's a way of working, it's a belief system in dealing with people …I guess I can probably sum it up best by saying, in the medical world, the assumption is 'doctors know best' …Not for us to be prescribing what is right or what is going to fix the situation. So if you're taking that as your base, then having, you can't have a scientific response to that. And I think that's the fundamental difference [social worker (l2)].

The dilemmas likely to be encountered by this discipline in attempting to apply the NH&MRC evidence hierarchy to inform social work practice clearly illustrates the limitations of assuming that increasing practitioner knowledge level of EBP would be an effective mechanism for increasing EBP uptake. Social work training, and subsequent practice models, cannot be readily accommodated within the scientific framework that defines EBP—regardless of how much the social worker knows about it. The professional philosophy of this discipline, more than any other at

QHS, challenges the rationale that underpins the linear implementation models that are often promoted in regard to EBP.

Social work practitioners did not indicate during interview feedback that their practice was uninformed by evidence or that evidence had no relevance to social work practice. Interviewed social work practitioners simply indicated that their evidence bases take an alternative form to the scientific data that characterises EBP in the health sector:

> Disciplines who've got the most scientific background and basis upon which to be doing it (promoting EBP). So it's bread and butter for them, you know in terms of that. If you sat down and asked social work to articulate 5 theories on human behaviour we could, that'd be our bread and butter. We could do that very nicely, thank you and put that down. Whether that would satisfy people in terms of saying 'that's our evidence base' is another issue [social worker (w3)].

> Its practice wisdom…systems theory and behavioural theory and …we keep up to date and form the links with people… I see them informing me on current practice [social worker (v3)].

Although QHS social work practitioners as a discipline resisted the science of EBP, they consistently voiced an acknowledgment that they needed to develop some strategy to allow for the validity of social work evidence to be acknowledged and subsequently legitimised, particularly in the multi-disciplinary environment. This is a call that is echoed in the literature, outside of the multi-disciplinary context (Reid & Zettergren 2000), and illustrates the commitment of QHS social workers to validate this practice.

> The other thing that we've attempted to do here in social work is to actually developed a network, a system where we can actually get into some research ourselves in terms of projects-type work…With social work, we haven't really had a research base here, and other disciplines have had a strong research base, and I think this has probably been a component in the evidence-based stuff that's added to it, they've already got that… that might also help to take away the poor stigma if there is such, about us not having evidence-based practice as it's perceived. So I think, yeah, if we can develop those research links in a real way, and you know, we've got to promote ourselves, we've got to push ourselves up there because other disciplines do it, and do it well, and do it easily, because it's the nature of their business [social worker (v3)].

This fact, like few others, illustrates the potential professional disempowerment of a non-scientific discipline operating in a scientifically based service system.

5.5.4 Discipline Marginalisation

Unanimous feedback from team members identified the role of the social work practitioner as a valued one that was considered critical to effective practice within the multi-disciplinary context. Importantly, the team leaders unequivocally identified that they considered social work to have equal power and authority in the decision-making process:

> So each individual in his own field should feel free to take the lead … (with some disciplines) it's not so clear as to what is the best practice. I think that social work is one area where there's that situation and perhaps they will develop over time but currently it's not quite as easy as the main scientific groups. I accept that they know what they're talking about you know as I said as part of the team. I mean you work with these people and you know how they perform and how successful they are and how effective they are. Once that's been established then there is no problem accepting their decisions. I don't think it affects the team or their place in the team if they've shown that they are effective in their performance and the fact it isn't evidence based doesn't mean that they aren't making the right decisions [medical practitioner (f4)].

Furthermore, interviews with site management staff clarified that they placed no expectation on social work practitioners to support practice decisions with scientific evidence.

> So I do understand, very much, the softer end of the spectrum, for disciplines like social work…It is easier to look in physiotherapy whether or not some treatment that you do is based on evidence than it is (in social work) to know if one approach is more effective than another, in a global outcome. I guess that knowledge makes it easier for me to be able to be more 'forgiving' across the professions to make sure that at least I know people are pursuing evidence base practice, without pursuing it to death. I do understand that people can't prove what they do, but if I know that their treatments are effective, then I can work with that [management (g3)].

> I don't think we can purport to be any kind of 'good health service' while we are not adopting an evidence-based approach. However, given that interventions are fairly fluffy once you get past which drug you give somebody, it's difficult to say….. I guess what I'm committed to saying is that evidence-based practice is important but you can't live or die on it, or you'll kill half the professions, and you'll kill half the outcomes for the patients at the community end, and when people are sick, something make them better, you give someone an x-ray… you need that, but we also need the stuff that says 'I've looked at your social situation, I've looked at all this kind of stuff… and I think this would be the best thing', or it didn't work because of something.. You have to be able to have fluffy otherwise you're not going to get as good an outcome [physiotherapist (o4)].

Despite this feedback, and the universal view that social workers were valued members of the multi-disciplinary team, a number of concerns were raised by multi-disciplinary team members around the failure of social work to have a scientific basis against which to measure their practice decisions. Comments such as 'they come from a non-medical background and they fit into teams but often operate differently…it's pretty airy-fairy (nurse, q2)', and 'some of them just don't have any real evidence base…they seem not to (physiotherapist, x3)' illustrate these concerns. It is important to note that social work was the only discipline about which this concern was raised, and that the language used to describe interactions with social work practice ('forgiving', 'airy-fairy', 'fluffy') suggests a level of condemnation of the approaches used by this discipline.

Three out of the four social workers interviewed at QHS stated that they felt disempowered and assessed that EBP in its current form (focusing on scientific evidence) was creating a divide between disciplines. Whether this division results directly from introduction of EBP into the health sector or whether EBP is exacerbating a level of inter-disciplinary division already in place (Cowles & Lefcowitz 1992, 1995; Netting & Williams 1996) that is based on fundamentally different worldviews around practice, has not been specifically tested by this study. The literature review process identified a history of division between social work and other health disciplines (MacDonald 1991; Nandan 1997; Williams 1999) that appears to be worsening with the emergence of EBP. Social work interview participants made a clear link between EBP and the marginalisation of social work as an unscientific discipline operating in a scientific practice environment.

> Evidence based practice…it's seen to be the only way to validate your work, that as we aren't able at this point in time to, to argue as clearly as other disciplines do on what evidence based practice is, then I think there is an issue for us…professionally we are being devalued because we're unable to compete in that context…You might have 95 different outcomes, depending on the nature of the people, it's the nature of the situation [social worker (u2)].

> I don't know whether they would talk about it (inter-disciplinary differences) in those terms; 'you know, our discipline has the benefit of being hard, science if you like, and we consider that we practice in an evidence based way and you don't. I don't think they think necessarily in those terms, but, to give an example; if someone needs a Centrelink form filled in …that may be given to social work, to look at that, or organising a disabled parking sticker etc, but if someone is really troubled it's, 'oh look has anyone done a referral to neuro-psych', …and I'm talking about the senior geriatricians now who've been making those comments, that it is thought that if someone has something which is troubling them, that coming up with the cognitive assessment will answer all their needs, and it may be that that might be useful, but there are social workers here who have counselling, training and a wealth of experience and

> practice wisdom… It's there and it needs to be recognised that our value is not seen as being equal… there's sort of a demarcation line, and you know if you're on a building site and you were carrying materials and someone else picks them up and builds. It's almost as cut and dry as that and it is linked to the fact that there isn't an evidence base for social work…But the respect for those people for whom it is important to be recognised as a credible worker isn't there… which is why I think there's so much discussion about it (EBP)…it's an attempt to contrive a sort of a knowledge base or a practice base for us as a discipline which is to be considered equal to others [social worker (v2)].

The exception to this view was from a social work practitioner practising in a highly specialised field of practice within QHS who, in the process of discussing their own unique level of input, validated general social worker perceptions around a lack of equity in decision-making for that discipline:

> In the specific clinic that I work in, the other therapists recognise the need for social work and they actually ask me to come and listen. So that says a lot about how they view social work, so I think I'm very fortunate that there's a very distinct role for social work in the clinic… I think in some of the other areas it's more of a struggle but I really can't comment on that, that's only observation. But for me certainly my experience is not one of struggle [social worker (x2)].

The existence of these perceptions by social work is problematic for achieving equity and equality in decision-making in the multi-disciplinary team. While conflicting views continue to exist on how social work is perceived as a result of non scientific-practice, EBP will remain a divisive concept. The fact that the other practitioners in the multi-disciplinary team did not believe there was a division is negated by the fact that the discipline, itself, felt marginalised. This is a significant issue in adoption and accommodation of EBP to multi-disciplinary practice.

The insights gained around the marginalisation of social work within the multi-disciplinary rural team as a result of EBP are unique to this study and have been documented in Murphy & McDonald (2004).

5.5.5 Professional Legitimisation: Summary and Discussion

The data from the QHS site illustrates that EBP has become an instrument for the validation of practice and, through this, the attainment of increased professional legitimisation. The degree to which this occurred with the QHS multi-disciplinary team was found to be variable. The 'scientists' of QHS had indisputable ties to science coupled with high levels of status and legitimacy based on an actual and an assumed adoption of scientific and proven treatment techniques. The QHS 'seekers

of science' were striving at a professional and a practice level to create stronger links to evidence for reasons such as perceptions around professional competence and the substantiation of practice approaches. Finally social work, as the only discipline whose practice approaches did not marry at any level with scientific practice, struggled to achieve legitimisation within a strongly medical and scientific environment. Dopson et al. (2002) have identified that different disciplines value evidence differently and that this is a determining factor in successful implementation of EBP. The knowledge gained from data analysis reinforces this finding and considers its implication within the QHS service context.

The reliance of the QHS sub-acute field of practice on the input of multiple health disciplines makes variations in perceptions on professional practice especially pertinent. While differences in applicability, use and views of EBP may be accommodated in environments where uni-dimensional treatment is provided by individual practitioners, discipline-based differences took on additional dimensions within the sub-acute context of QHS. The focus of treatment provision at QHS, with complex mobility and cognition problems, required the diversity of input that characterises the multi-disciplinary team. Multi-disciplinary treatment decisions that are informed by a paradigm that is not representative of the practice perspective of all team members have the potential to be problematic and divisive. Contemporary literature has consistently documented the negative impact of discipline-based differences on effective practice within the multi-disciplinary team (Abramson & Rosenthal 1995; Brown, Crawford & Darongkamas 2000; Lichenstein et al. 1997; Nandan 1997; Soothill, Mackay & Webb1997).

The data in the following section seeks to clarify the ways in which EBP, given the level of diversity already identified, is applied in the multi-disciplinary environment and how it influences team structure and dynamics.

5.6 POWER AND HIERARCHY

5.6.1 EBP as a Multi-Disciplinary Concept

The notion of the multi-disciplinary team has been assessed as a 'widely known but rarely implemented concept' (Weller & Veale 1999, p. 327). To examine EBP as a multi-disciplinary concept, participants were asked whether they believed multi-disciplinary approaches to practice were valuable and, if so, to what extent evidence specific to multi-disciplinary practice was used across QHS teams. All participants across all disciplines identified a strong multi-disciplinary environment in which teams were seen to work effectively together to enhance and complement

treatment approaches. There was general agreement, however, that, despite the centrality of multi-disciplinary approaches to the work undertaken at QHS, there was very limited evidence available to inform that practice. Of the 25 interview participants, only one participant, a nurse, indicated there was a strong body of evidence available to inform diverse disciplines working together to meet the needs of individual patients. This participant worked in palliative care and believed that multi-disciplinary evidence availability was unique to that practice environment.

Comments from multi-disciplinary team interviews reinforce the paucity of available multi-disciplinary evidence or clinical practice guidelines to inform sub-acute health practice.

> I don't think there's a lot of evidence base that exists around multi-disciplinary practice at all, and I think that's partly because the models of research around multi-disciplines practice are very difficult. They exist, they usually require somewhat larger numbers than you would really hope randomised control style trials, and they're complex to understand… I think that's one of the biggest problems facing evidence base, is how to try and include more routine practice in this field [team member, individual and group interview (u4)].

Accepting that practitioners operate in a multi-disciplinary environment where the use of evidence in practice is promoted—but where multi-disciplinary evidence bases to inform that practice are not readily available—it is important to explore how decision-making occurred within QHS multi-disciplinary teams.

Using evidence in the multi-disciplinary team

The interview process depicted multi-disciplinary EBP at QHS as equating to discipline-specific evidence applied to a team context and underpinned by an acknowledgement of the need to increase understanding across disciplines of the evidence used to inform the treatment decisions of the different discipline areas.

> They apply their own evidence-based techniques to their programs and as a team we apply them individually …a classic example of each person knowing their own particular side of the evidence-based data and applying it through the pathways so the whole team agreed to it but each individual of that group deals with it in their own way… as part of team conferences we would exchange information … I've certainly learnt from physios and OTs on the re-hab side and I would hope that they would also learn from me, about the medical evidence-based side of things so I think there's an interchange of information … So I think evidence-based medicine is an important part of team practice [medical practitioner (v4)].

While this is the sentiment consistently voiced at interview, the statistical data, as detailed in Table 23, shows that the vast majority of disciplines at QHS have a limited understanding of the evidence bases of other disciplines.

Table 23: Knowledge of evidence relevant to other health disciplines (QHS)

HEALTH DISCIPLINE		**Low**		**Medium**		**High**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	3	100	3				
Nursing	40	55	22	20	8	25	10
Social Work	6	67	4	33	2		
Psychology	7	29	2	57	4	14	1
Physiotherapy	10	80	8	20	2		
Occupational Therapy	12	67	8	8	1	25	3
Dietetics	7	57	4	43	3		
Speech Pathology	8	75	6	25	2		
Podiatry	4	100	4				
Prosthetics/Orthotics	6	100	6				
Exercise Therapy	2	50	1			50	1
Total numbers/overall Percentages	**105**	**65**	**68**	**21**	**22**	**14**	**15**

Further, written questionnaire feedback suggests that this lack of inter-disciplinary knowledge was considered an issue in effective team treatment decision-making. Participants' comments such as 'it is critical to understand the evidence-bases being used by other practitioners if we are to tailor treatment responses to achieve the best possible outcomes for patients', and 'I know that my work is based on evidence but what about others?' highlight that in a multi-disciplinary environment the ability of each discipline to feel confident in the treatment approaches adopted by other practitioners within the team is influential. The availability of evidence to support a decision was identified as one mechanism to bolster this confidence and is illustrated by references in interviews to social work practice as 'airy-fairy', and physiotherapy and medicine as 'scientific'.

The ability to prove (or disprove) treatment decisions with evidence was purported to be a key influence in assessments of practice validity and legitimisation and, as such, a driver for using evidence in the multi-disciplinary environment. However, analysis of interview data showed, most consistently, that the perspectives of the team leader determined the extent to which evidence provided the basis for team decision-making and practitioners control over the decision-making process.

A comparative analysis of the different teams identifies the ways in which evidence, on the one hand, can be a mechanism for enhancement and validation of practice and, on the other, a mechanism for monitoring of individual and team decision-making processes.

> I accept that they know what they're talking about as part of the team, I mean you work with these people and you know how they perform and how successful and effective they are. Once that's been established then there is no problem accepting their decisions. I don't think it affects the team or their place in the team if they've shown that they are effective in their performance and the fact it isn't always evidence-based doesn't mean that they aren't making the right decisions [medical practitioner (v4)].

> It's more difficult for some of the allied health disciplines to stop treatment… that if there was a lot of evidence behind what was happening to the patient, and you could say 'OK, well I'm here now, the evidence is that I'll be there after I've done X'. Then you probably find people would be able to establish that. But because there isn't that evidence someone else has to take a decision and take responsibility for a decision to say 'Well I think that this therapy needs to stop now because it's not going anywhere', and that's something that nobody wants to do unless you're prepared to take the medico legal responsibility for it. So, and I think that therefore in medicine we're making those decisions all the time, and in a way I think there's a greater community acceptance of a doctor saying 'Well I think that's the end' rather than the physiotherapist saying 'I think I should stop seeing you because its time'… So maybe if there was more evidence, then it may help some of the therapists make clearer decisions about what therapy and what affect that a therapy is having for the patient. And sometimes it's obvious, but when it's not obvious it's difficult [medical practitioner (k4)].

The last interview statement provides insights relating to the scope of medical authority in the health service system at a number of levels. It identifies the validity given to medical decision-making through traditional community standards and expectations on the role of medicine, it highlights the ultimate power of veto of medicine in the practice environment, and it reinforces the role of medico-legal responsibility in driving treatment decisions. In an environment of increasing litigation, the capacity for treatment to be proven to be efficacious is critical (Rodwin 2001; Rosoff 2001). For the medical practitioner, decision-making is driven by the knowledge that, ultimately, 'the buck stops here' (Gair & Hartery 2001).

Team function and decision-making in terms of evidence, therefore, must be examined against the notions of leadership and authority rather than just use and validity of evidence, if the place of evidence in the multi-disciplinary team context is to be understood.

5.6.2 Leadership and Authority

Data from the interviews found 19 of the 25 health practitioner participants at QHS identified the medical consultant as taking the ultimate decision-making role within the health team—findings in line with previous work undertaken on medical dominance in team leadership and decision-making in health practice (Gair & Hartery 2001; Willis 1990).

The following statement is representative of perceptions of the extent to which medicine took a lead role in decision-making within QHS teams:

> Certainly our rehab team is strongly steered by our rehab consultant…it's both historical and perhaps a method approach is what we use here. Even though we do meet weekly as a team, with the consultant, and then I meet once a week with him during the ward round to see all the patients, and then the team meets without the doctor every day, it's still seen that it's very medically driven [nurse (c3)].

The leadership structure of QHS teams is a duplication of the discipline clustering detailed in previous sections of this chapter, which, based on decreasing levels of affinity with scientific evidence, is hierarchical in nature. The extent to which this duplication is based on a resultant or causal relationship between science in practice and medical dominance in health service delivery could not be determined by this research study (Mizrahi & Abramson 1995). However, the hierarchical nature of the leadership structure is encapsulated in the following comments:

> I think the medico sit at the top invariably, and so they should because they're the ones that are going to have to wear it if anything goes wrong. I think it doesn't work for patients where there is not a firm medical lead at the top for them. I think the other allied health professionals (physiotherapy and speech pathology) have got a lot to do with the patient's treatment. I think a little further, in the next circle out, would sit social work, and then on a circle outside that, some of the other professions such as prosthetics & orthotics (P&O)…it depends on the patient. A person who's a double amputee of course has P&O up there very high, so it does depend on the condition …so it alters [psychology (h3)].

Importantly, interview feedback identified a diminution of authority that increased in line with the decrease in the use of science to inform practice and, consequently, provided a provisional link between levels of authority within the team and levels of science in discipline practice. For social work, as the 'resisters of science' this has particular relevance in regard to the levels of authority they are allocated within the multi-disciplinary context:

> I think we work very much on a medical model and probably social work is down the bottom of the pecking order in, in many, many ways. The doctors will see their particular expertise as very important, they will literally say, you know; what's the nursing input, what's physio, what's OT, what's speech. There's sort of a hierarchy and social work will be last. Not necessarily always because we have less to offer but sometimes I think the view is seen that we pull it together, give it all the different physical and medical issues but we're the people that have the overview that can sometimes bring it all together and make it work for someone but I think clearly we're not necessarily viewed as highly as some of the other professions [social worker (w2)].

The potential for EBP (through the science it represents) to increase practitioner authority within the multi-disciplinary team, is effectively illustrated when social work discusses the way their practice is considered to be less valid. All the social work practitioners interviewed reiterated the extent to which they were allocated less authority within the team as a result of the weak links their discipline has to science:

> If it's identified that someone has got a severe emotional disturbance a psychologist will be brought in and that's fine. Often you know there's a big overlap between psychology and social work in this setting as in many others and somehow it's seen that the psychologist perhaps input is more valid (more scientific) than social work even though we could be saying the same thing. We may say it in slightly different ways but essentially I think our assessment is very similar (but they will be sought and listened to) [social worker (w2)]

In an extension of the notions put forward on practice legitimisation, interview feedback also identified that, specifically, for nursing as a ‘seeker of science’, EBP was clearly seen as a means through which to increase the sphere of influence of individual discipline areas and, through this, levels of organisational authority.

> It’s been a bone of contention of mine that nursing don’t do it as well that they should. They don’t sell themselves well enough, they don’t have the confidence to speak up. So I gather in a lot of instances it’s the medical department and allied health that take leadership roles rather than nursing and I would like to see that changed …nurses have got to be able to go and write more (evidence-based) papers and present more conferences and have that confidence to stand up and lecture other disciplines [nurse (l4)].

Acknowledging the existence of a leadership hierarchy in which medicine sits ‘at the top’, in line with traditional health team structures (Warlow 1996; Waskett 1996), interview data indicates there was also the capacity for shared decision-making within the multi-disciplinary team, dependent on

client need. At QHS, all interview participants identified a consistent process of striving for equity in decision-making, within a medically driven framework:

> If the doctors not crotchety he won't bombard the team, and he will allow the team to take up the appropriate roles. If it's about cognition then the occupational therapy, speech pathology team members might take up the stronger role, psychology. That core group might have a stronger role in terms of the decision-making about that aspect [occupational therapist (z2)].

> In the team that I work in obviously the consultant, the medic has the ultimate decision but I would say that we are very strong in him not making all the decisions but would really depend on who's the most relevant for making the decision… I think we're actually really good at that. I don't think there's one, obviously if there's a really complex issue then the consultant is always the one with the final word but yeah I don't think there's particular disciplines that lead, in the decision-making [physiotherapist (x3)].

The tendency to adopt a team-based approach to decision-making was identified by all interview participants as being a unique feature of sub-acute service provision. This field of practice, because of the complex nature of rehabilitation and palliative care, requires significant levels of coordinated input in treatment decisions. This environment is, therefore, more conducive to a collaborative multi-disciplinary approach to decision-making.

> I find that, especially working in hospital system, a lot of it, especially over at the acute site, is a lot more medically driven. So you work within that medical model. Um, and that's a very strong, powerful model over there so there is definitely a difference between sort of the medical authority in acute versus sub acute [psychologist (i4)].

> You know sometimes when medical staff come to this organisation and they start, well they get a bit of a shock to the system because they're use to other organisations, large acute hospitals that you know, basically under the medical model, medical dominance, all that business. Um, then they come here and they see such a strong team environment and they say 'Well, what do I have to give here?'…you know but they do have a part to play, it's just that they've got to work in the team, not work outside the team or work on top of the team [podiatrist (j4)].

The profile in regard to leadership and authority in decision-making at QHS, therefore, is of a location in which strong medical leadership is provided within a contributory team environment.

Interview feedback established a strong link between medical leadership and the subsequent uptake of EBP by health disciplines within QHS multi-disciplinary teams.

> Yes it does. It does (filter down through the team). I mean our consultant physician is someone who's read widely and is interested in the literature and knows what evidence is out there, and then he will often if there is a debate on, he will pull it out, he will use that and say 'look what I've just read recently blah, blah, blah, that this is the way to go' And he will use that. That's his big tool, you know in debate [occupational therapist (y3)].

As discussed in the following extract, collegiate input and support was identified as an important factor by staff:

> I think there's a flow-on effect to everybody because of (management leadership). You can't just hide away in the corner and ignore it, that's for sure. I think there's sort of constantly people sort of talking about the evidence based push and I think that's why, again, the consultative team works well because they're made up of all the disciplines so they can sort of motivate each other, it's not just one group going off on its own, you sort of get motivated because other people are doing it and it's like a bit of an incentive [occupational therapist (g4)]

The most recurrent theme to emerge as the major influence on uptake of EBP, however, was the provision of specific direction on EBP by the medical team leader. This influence can either motivate or detract practitioners from the use of evidence, as demonstrated by interview feedback. The first two of the following three statements identifies participant perceptions that medical leadership promotes uptake, while the third statement outlines an unconscious decision to not pursue information (relating to multi-disciplinary EBP) as a result of lack of support and direction from team leadership (medicine and physiotherapy in particular). Interestingly, this participant had previously identified a very strong reliance on EBP within their practice model, based on the scientific nature of their discipline area (dietetics) and the extremely strong level of collegiate support for the paradigm within their discipline-specific program area:

> But I'm sure that there are barriers (to uptake of EBP) …For instance, the fact that we've got no rehab specialist here. That could be seen as a barrier to that as well. We've got a geriatrician with rehab interests. But yeah I think there could be more medical staff to lead teams. I still think that we often look for leadership from that direction [prosthetics and orthotics (m4)].

> And that would feed into allied health; if you think that the medical staff are on board, then you would definitely adopt a more evidence based approach to practice [manager (z3)].

> I guess that's a very interesting question, because two of the people in the focus group, I would say, are the leaders of the rehabilitation team that I've been involved in and they didn't seem to be very supportive of evidence-based practice. I don't know whether that's because they've had

> a lot of experience, which they have. And they've noticed that it hasn't always been appropriate, but certainly the focus group was the first time I've really given any serious thought to group based inter-disciplinary evidence-based practice…I haven't had much experience with it, and perhaps the reason I haven't had much experience with it is because those leaders were not behind it [dietician (e4)].

Interview feedback on the extent to which medicine, as the lead discipline, actually used evidence to inform practice varied from those gained through the questionnaire data. The questionnaire represented a self-rating process in which each discipline was able to provide an assessment of how often they believed they used evidence. The interview process cross-referenced these responses with insights around how team members perceived levels of uptake by the team leader. This line of enquiry identified a lack of uniformity in application of EBP, and a decision-making process driven by leadership perspective on a treatment approach, rather than by rigorous adherence to evidence.

This study has examined two teams, with data identifying variability between these based on leadership commitment to EBP. The impact of leadership perspective was particularly pronounced at QHS where the teams were working under medical leaders with different views on the value of EBP.

5.6.3 Work Unit Variability

Differences in perceptions on levels of adherence to evidence-based approaches by medical team leaders are illustrated in the following statements representing each end of the spectrum:

> From my observations there's been a fairly strong medical culture that does rely on evidence based information for clinical decisions. I can well think of numerous case conferences or where, you know we're going through all the patients on the ward, and new drugs, new information will dictate medical decisions from, well, medications through to the advisability of decisions for operation, surgery, through to the decisions around whether or not somebody should be resuscitated…There are certainly a number of decisions that I think, yeah many decisions that medical practice are making, that is evidence based [social worker (d4)].

> It is a very medical model, and yet the doctors tend not to, I would have to say, adopt an evidence based approach despite the lip service. If we look at how people, say, someone who has had a stroke comes into the organisation, we would talk to three different doctors and they will tell you three different ways, despite some very strong evidence about how something should be managed, how strokes should be managed, so although we support evidence-based practice, and I'm sure the doctors do . As an organisation though, we understand that that's bad

> and that we are at risk of patients not being treated properly, and so as an organisation we're trying to have some engagements with the medical staff to make sure they adopt a more evidence-based approach [manager (z3)].

These responses reinforce the critical role of leadership in determining uptake, regardless of established organisational imperatives for EBP.

This variability in application at the leadership level of the work unit was identified as having a potentially negative influence on the uptake of EBP. A number of practitioners, particularly those from the disciplines more closely aligned to science, viewed the use of EBP at the leadership level as instrumental in ensuring uniformity and surety in decision-making across the team, as well as being fundamental to the adoption of a culture promoting EBP.

> I've seen actually two fairly clear examples (of how the team leader of a multi-disciplinary team has an impact on whether evidence-based approaches are used). One where there is a medical practitioner who insists on it (EBP), who makes himself sometimes unpopular because of that. But, actually I think at the bottom of what people really feel, is that they would have to respect it. There is another medico I work with quite often who lets the team makes all the decisions. Sometimes there are members of the team who become fairly unscientific and can become, what I call, unclinical, or they can let their own opinion influence their decision-making a little too much, and I would actually like to see that medico be stronger … using evidence-based decision-making, I think it's a very good thing for everybody…there's a clinical removal from the patient which is much more healthy than becoming personally involved in the patient. It is fraught with all kinds of dangers [psychologist (b4)].

Interestingly, all social workers (the 'rejecters of science') expressed a view that medicine, as a clinical leader and as a scientific discipline, should use EBP to guide and justify their practice decisions as part of satisfactory service provision to clients.

> There are certainly a number of decisions that I think, yeah many decisions that medical practice are making, that is evidence based. And I think quite rightly so, I mean they are, they're the sort of, of the scientific base of that discipline is such, I mean if they weren't making it on evidence base then what in the hell are they doing in treating people that way? So yeah, you would expect it to be a highly valued and highly desirable work practice - for the doctors [social worker (d4)].

5.6.4 Power and Hierarchy: Summary and Discussion

In summary, while QHS study participants operated in a multi-disciplinary environment, there was a lack of rigorous multi-disciplinary evidence available to inform this practice. This recognised shortfall across the service system (Swinkels et al. 2002) requires practitioners to adopt a coordinated approach in which evidence specific to individual discipline areas is used to inform treatment decisions. QHS practitioners recognised that, in using this approach, it was increasingly necessary for practitioners to understand and feel confident in the evidence bases applied by colleagues within the multi-disciplinary team. Despite this acknowledged need, both qualitative and quantitative evidence shows that QHS practitioners actually had very little knowledge about the evidence bases used by others in their team. Decisions around validity were, therefore, based on alternative factors such as the perceived validity of discipline types and direction given by team leadership. The impact of team leadership in determining evidence use was the most consistent theme to emerge in data analysis. This finding reinforces those of previous studies that consistently identify leadership approaches as determining the place of EBP in the practice environment (Bilsker & Goldner 2000; Dopson et al. 2002; Ferlie et al. 2001; Newman, Papadopoulos & Melifonwu 2000; Pollock et al. 2000; Retsas 2000; Thomson O'Brien et al. 2004c).

The hierarchical structure defining the QHS teams maintained traditional notions of medical dominance in health team structures (Warlow 1996; Waskett 1996; Willis 1990) and was found to be more instrumental in shaping decision-making than a rigorous adherence to evidence. Acknowledging this, practitioners at QHS also identified that EBP had altered the practice environment and, to some extent, had increased the capacity for shared decision-making at the QHS site.

In summary, therefore, clinical leadership played a major role in the extent to which EBP was adopted at QHS. It would be a misrepresentation, however, to identify leadership as the exclusive motivator for uptake. Uptake was also influenced by a variety of other factors around training, practice models, and professional philosophy. The inter-relationship between these factors highlights the importance of adopting a multi-directional approach to understanding the evidence-based paradigm in the multi-disciplinary team environment.

> If you have a strong professional interest in what you're doing, that should be basically the driving force behind whether you do it or not. It is less affected by somebody else's attitude to the notion. I think that this hospital is unique in that we've got less medicos. I still believe that the medical profession has a strong influence on leading the move to EBP. And I certainly think

> that strong leadership and showing the use of evidence based practice will have an effect on everybody. But people have got to be convinced that it's useful and got to be convinced that it's easily accessible. That's when they're going to use it [manager (h4)].

Given this assessment, it is important to examine the assessed 'usefulness' of available evidence from the perspective of the QHS multi-disciplinary team member.

5.7 EVIDENCE QUALITY AND APPLICABILITY

The analysis of qualitative and quantitative data from the QHS site indicates that QHS practitioners saw the quality and applicability of currently available evidence as detracting from the successful uptake of EBP. Table 24 outlines the questionnaire findings from practitioners across the QHS study site, in which the vast majority of practitioners identified a limited availability of high quality discipline-specific evidence to inform their practice.

Table 24: Reported availability of high quality discipline specific evidence (QHS)

HEALTH DISCIPLINE		**Poor**		**Good**	
	Total n	**%**	**n**	**%**	**n**
Medicine	3	75	2	25	1
Nursing	40	47.5	19	52.5	21
Social Work	6	67	4	33	2
Psychology	7	43	3	57	4
Physiotherapy	10	60	6	40	4
Occupational Therapy	12	67	8	33	4
Dietetics	7	43	3	57	4
Speech Pathology	8	62.5	5	37.5	3
Podiatry	4	50	2	50	2
Prosthetics/Orthotics	6	100	6		
Exercise Therapy	2			100	2
Total numbers/overall Percentages	**105**	**55**	**58**	**45**	**47**

The only discipline to identify that evidence available to their discipline was plentiful and of a high quality was Exercise Therapy. Only between 50% and 60% of practitioners from medicine, nursing, psychology, dietetics, and podiatry felt the evidence available to their discipline was good, while the majority of practitioners in the remaining disciplines felt the evidence available to inform their practice was neither plentiful nor of a high quality.

This issue was complicated by the nature of sub-acute service delivery. Unlike the acute service context, many consumers accessing QHS have complex and multi-dimensional health needs. All

practitioners interviewed identified that current evidence failed to accommodate this level of diversity, resulting in decreased uptake levels within the multi-disciplinary team.

Of the 25 staff interviewed, all identified that the evidence available was not, generally, of high quality or applicability, with the following compilation of feedback from across discipline areas highlighting the extent to which the lack of evidence was an influencing factor for all disciplines in the use of evidence in practice.

> And I think that's probably one thing about our discipline, I don't think we do a lot of research [occupational therapy (k5)]… I think for nutrition it's primarily the quality of the evidence… the synthesis of the evidence…there's so much of it [medical practitioner (d1)]…the research is often so far behind what we're actually doing, you can take such a long time to get a systematic Cochrane review…It's so far behind what we're doing that, that it's almost pointless [multi-disciplinary (h5)]…the literature and the reviews and research just isn't there for our profession. So it is relevant but it's hard to find. [prosthetics/orthotics (e5)]…No, no like in terms of, in terms of professions it's new and young and therefore there is not, there's not very well validated research out there. A lot of it's individual case studies it's all those research limitations that affect us and there's just not the amount so that's why, that's why it lacks scientific basis. It's trying to get there but it's a long way off [speech pathology (b5)].

5.7.1 Evidence Quality and Applicability: Summary and Discussion

In essence, the quality and quantity of available evidence was poor and failed to meet the requirements of the QHS practitioner. The extent to which this influenced the maintenance of traditional views on leadership and practice validity was not specifically tested by this study. The assessment regarding evidence quality and applicability is supported consistently in the literature, with studies on the quality of available evidence finding that evidence across all discipline areas is often scarce and of poor quality (Bithell 2000; Crisp 2004; Gambrill 2003a; Herbert et al. 2001; Nilsson Kajermo 2000; Pollock et al. 2000; Rosen et al. 1999; Sheldon & Chivers 2000; Singleton 2002; Taylor, Wilkinson & Blue 2001; Turner 2001b).

This lack of available quality evidence as an inhibitor to EBP uptake was compounded by the location-based variability characterising service delivery at QHS.

5.8 LOCALITY BASED VARIABILITY

As a sub-acute service provider, QHS operates in hospital and community settings, often with the same individual client as they follow a process of rehabilitation with practitioner input. The teams

interviewed at QHS were involved across all service delivery contexts and so provided excellent insights into the impact of location on the adoption of EBP.

The consensus from all interview participants was that EBP could be applied much more readily in the hospital setting than the community setting. This was found to be due, mainly, to the dependence of EBP on the resourcing, structure, and increased locus of control provided by a hospital based setting.

> Well I think it's probably easier to apply in the hospital because there's a well structured system and teams who work together. The community is much more loosely set up and often it's an individual or different individuals from different organisations so the ability to apply evidence based medicine would be more difficult under those circumstances [medical practitioner (r3)].

The primacy of science to EBP was reinforced in a comparison of hospital-based over community-based service delivery when the scientific structure and profile of hospital environments was discussed. Practitioners identified that the hospital setting complemented the evidence-based movement in two main ways. Firstly, the resourcing available in a hospital, and the nature of hospital-based interventions, meant a practitioner was more likely to encounter practices dependent on the use of structured scientific approaches (such as pathology and diagnostic equipment). Consequently, practitioners were able to apply the most current evidence using the resources and practice tools that are an integral part of the hospital environment. Secondly, the hospital environment is one in which scientific language and concepts are fundamental to practice. This was identified as creating a service delivery context in which the concepts and strategies that underpin EBP were strengthened through common usage.

> In this environment, it's easy for us to stay scientifically based or evidence based because we are faced with it all the time. We have MRI reports to read, we've got blood reports, and all sorts of evidence/data strict fairly black and white stuff going on in the medical profession that gives a flavour of that through all the work we do. Whereas, out in the community, the person is dealing with much fuzzier concepts. As the patient moves out into the community, or as I, as a practitioner moves out into the community to work with people, I think that you 're working a lot more with people who are not trained scientifically and in situations that are not data based…I think that it's much harder in the community to either gather data or to really know what is really going on [psychology (l3)].

This view of the impact of service delivery context was put forward consistently by all interview participants, and reinforces the need to tailor the evidence and the approach used to the setting in which the service is delivered.

Interview participants also discussed the strong correlation between the degree of control offered by the hospital setting and use of EBP. The hospital environment was seen to increase the capacity to apply EBP, as many of the treatment approaches available to inform health practice have been developed within the kind of structured parameters that are integral to service delivery in an institutional setting. These parameters were not considered a central part of community-based practice, in which there is significant variation in regard to the locus of control available to the health practitioner. Consumers receiving services in the institutional environment of a hospital operate under a structured regime where the health practitioner drives the decision-making process. In the community setting, this situation changes to one in which there is increased consumer control over environment, particularly their own home environment—as is the case with the Rehabilitation in the Home program. This fact was identified as impacting on practitioner capacity to rigidly adhere to structured evidence. In the community setting, the views, as well as the needs, of consumers needed to be considered when making practice decisions. There was no guarantee that these views, or those of other health and welfare professionals in the community setting, would be in line with the frameworks put forward by the available evidence.

> You have a lot less control generally once people are out in the community; once people are out in the community then it's much more guided by the environment and the individuals that you're dealing with and the systems that you're dealing with that can vary a lot more than they do in the hospital setting so a lot of the times any evidence that there is just wouldn't, you wouldn't be able to implement it or it's not applicable or yeah you just don't have the same kind of control over most things [physiotherapist (o3)].

Interestingly, while practitioners identified the community setting as changing the degree of control they had over environment, practitioners also argued that the community setting increased the locus of control the practitioner had over their individual practice decisions. This was identified as having an impact on the degree of EBP uptake. Interview participants stated that, away from the structured environment of the hospital, there was a greater level of practice autonomy and an increased degree of discretion around whether or not to use evidence. This meant that the centrality of evidence to practice was diminished, as was the need to respond to both organisational and multi-disciplinary team expectations. This viewpoint is illustrated in the following extracts:

> I think because the multi-disciplinary team meets all the time…you're more inclined to justify what you're doing, why you're doing it and show them what you're doing making change and helping the patient out, whereas once you're in the community I guess you're a little more isolated in terms of your care. There's not that face to face contact with the rest of the people to network and cross reference [speech pathologist (j3)].

> In the formalised setting, if it's decided to pursue evidence based practice it will put more pressure on you to comply with it and to do that. Whereas if you're out in the community, anywhere you don't have that pressure from anyone in authority or from your peers or whatever, there might be less pressure to adopt the movement [prosthetics/orthotics (n3)].

These insights are significant in highlighting that assumptions around the uniform applicability of evidence cannot be made when health practitioners are working in treatment areas operating across different service delivery contexts. When operating across hospital and community settings with the same consumer and the same medical condition, the data identifies that the motivator for uptake is the context in which the treatment is delivered rather than the treatment framework itself.

These findings highlight, as few others have, the role of the organisation and context in the implementation of EBP.

5.8.1 Locality Based Variability: Summary and Discussion

The nature of service delivery at QHS meant that practitioners operated across community and hospital practice environments. In a comparative analysis of these contexts, EBP was found to be more readily applicable to the hospital setting. This was assessed as resulting from:

- The structure of the QHS hospital setting, which had a strong institutional imperative for EBP and increased mechanisms for service delivery monitoring. This structure was identified as reducing practitioner autonomy in decision-making and increasing the need to support decisions with structured evidence.

- The lack of control over many elements of service delivery the practitioner encounters once they move into the community. The complexity of achieving evidence-based service delivery in the community sector has been recognised (Ferlie et al. 2001, Taylor et al. 2001; Weller & Veale 1999), as has the diminution of practitioner locus of control and the importance of context in determining the nature of practice (Dopson et al. 2002; Mayer & Piterman 1999; Weller & Veale 1999). The process of attempting to apply EBP in the

community sector is further complicated by the fact there is little quality evidence to support service delivery in this type of setting (Mayer & Piterman 1999).

5.9 THE PLACE OF EBP IN THE QHS PRACTICE SETTING

A review of the data on EBP uptake at QHS reveals a complex practice environment where multiple factors influence the use of evidence. These factors span practitioner levels of knowledge and attitudes to EBP; the nature and influence of discipline-specific frameworks and practice philosophy; the nature of leadership direction around EBP; the institutional imperatives driving EBP uptake; the quality of available evidence; and the service delivery context. The complexity of these influences reinforces powerfully that the traditional linear uptake model discussed in previous chapters is manifestly inadequate. The complexity of the uptake environment at QHS is depicted in Figure 9 and illustrates the scope of what needs to be considered to develop an understanding of EBP in the sub-acute, multi-disciplinary practice environment.

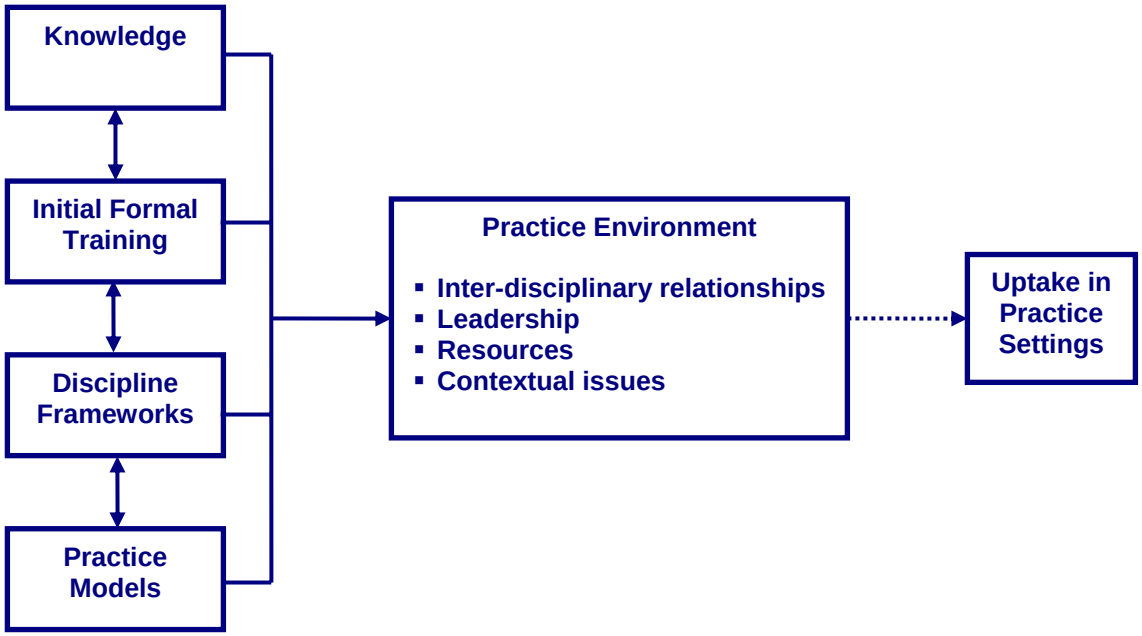

Figure 9: The environment for uptake of EBP in a practice environment

While the findings included in this chapter mirror much of the work that has been undertaken previously relating to knowledge and uptake, practice barriers and enablers (such as time constraints or the provision of professional development), context, and organisational factors, it has also provided new insights specific to the multi-disciplinary practice environment. Additionally, while QHS, with an 'Accessible' ARIA rating, was not found to be a site experienceing notable rural disadvantage, participant feedback identified 'degree of rurality' as a key influence in the adoption of EBP. Data specific to the impact of rurality will be explored in detail in the following chapters, which, in line with established process for this study, focus on health services experiencing increasing levels of rurality.

6
Case Study B: Base Health Care

THE EVIDENCE-BASED EXPERIENCE IN A RURAL CITY IN REGIONAL VICTORIA

"They have to actually put their money where their mouth is."

6.0 INTRODUCTION

This chapter, the second of three chapters outlining research study results, presents the findings from case study B 'Base Health Care' (BHC), a large health agency providing acute and sub-acute services in a rural city in regional Victoria, rated 'Moderately Accessible' (ARIA).

BHC is an organisation with a strong commitment, driven by clinical services, to the adoption of evidence in practice. This commitment is outlined in the organisation's Annual Report (2001, p. 8), where the use of 'current evidence for improving the quality of care delivered' is identified as a major organisational achievement. This commitment is implemented through a formal process of developing clinical pathways[1] based on current best evidence, and is adopted organisationally in treatment for key clinical care areas. At the time of writing, pathways development at BHC had occurred in a number of areas and with an organisational commitment for an expansion of the program into the future (BHC Annual Report 2001, p. 8).

The areas for which pathways have already been developed at BHC are:

- total hip and knee replacement
- acute coronary syndrome
- acute stroke/T.I.A.

[1] Hoxie (1996, p. 93–96) identifies that 'clinical pathways are known by a variety of terms, such as practice guidelines, clinical protocols, parameters and benchmarks. Clinical pathways represent a continuum of care that identifies structures (institutions, facilities, etc.), caregivers (clinical professionals) and processes (treatment paradigms) that intervene at critical points to efficiently treat the patient and achieve a defined outcome.'

- vaginal hysterectomy/repair
- abdominal hysterectomy
- fractured neck of femur
- chemotherapy
- large bowel resection
- community acquired pneumonia

Participants from this study site, as outlined in the methodology chapter, did not work exclusively in sub-acute service delivery. Practitioners who responded to the questionnaire worked across both acute and sub-acute services, while those involved in the interviews were members of the team that developed the evidence-based clinical pathway for treatment of patients admitted to BHC with stroke. This team was chosen for inclusion in this study for two main reasons. Firstly, stroke was the original treatment area for which a pathway was developed within BHC and, therefore, participants had unique insights into the process for developing and introducing a treatment regime underpinned by evidence. Secondly, the treatment area encompassed by the stroke pathways was assessed through consultation with BHC clinical staff to be the most closely aligned, from within the pathways development program, to the sampling criterion underpinning this study. These criteria, outlined in the methodology chapter, encompass service delivery across hospital and community-based rural settings and established clinical pathways and/or EBP frameworks for treatment provision.

The chapter, comprising five major sections, begins with a description of the organisation and the study participants. The next four sections outline the four key themes identified during the data analysis process. These themes and sub-themes are depicted in Figure 10, overleaf. The final section provides a summary of findings relating to the disciplines and context defining BHC.

Figure 10: Emergent Themes BHC

Catherine –this page was designed as a PDF file and is held in another file

6.1 BHC: AN ORGANISATIONAL AND PARTICIPANT PROFILE

This first section provides an overview of the BHC organisation and details the profile of BHC study participants. It also provides an outline of the different types of data collected at BHC, and the number of study participants involved in each data gathering method.

6.1.1 Health Service Profile: Base Health Centre

Base Health Centre is the major specialist referral centre for a large rural region covering 30,000 square kilometres and servicing a population of approximately 50,000 people. The organisation provides acute and sub-acute hospital-based services as well as services in the community.

BHC became an amalgamated entity during the 1990s, following the merging of a large rural hospital and a small rural health service. The service is currently located at two separate sites situated approximately forty kilometres apart.

The service is managed by a community-based Board of Management which is ultimately responsible to the state Minister for Health for the service's funding and outcomes. At the operational level, BHC is managed by a Chief Executive Officer who is supported by three executive managers, each with wide portfolio responsibility for a range of service delivery areas as depicted in Table 25 (BHC Annual Report 2001).

Although the service employs a large number staff (medical, nursing, and allied health practitioners; visiting medical practitioners; and management and administrative personnel), the data in this chapter relates only to the 145 staff members targeted for involvement in this research. A profile and specific discipline allocation of these staff members is detailed in a subsequent subsection of this chapter.

Table 25: BHC service delivery areas

Chief Executive Officer **Board of Management Sub Committees:** Finance and Corporate Planning, Medical Consultative, Medical Advisory Board, Improving Performance, Clinical Governance **Community Liaison:** Fundraising, public relations, marketing **Accreditation and Quality**		
Director of Residential and Community Services **Medical Services:** Anaesthetics, Day surgery, Dermatology, Endoscopy unit, E.N.T., Gastroenterology, General surgery, Geriatrics, Obstetrics, Oncology, Ophthalmology, Orthopaedics, Paediatrics, Psychiatry, Rehabilitation, Special clinics, Urology **Diagnostic Services** **Medical Ancillary Services:** Library, pharmacy **Accident and Emergency** **Resident Medical Officers:** Ward and emergency department services **Clinical Risk Management:** Co-ordination of clinical risk management project	**Director of Medical Services** **Aged Care Services:** Residential services, nursing homes x 3, Extended site health services **Primary Care Services:** District nursing, aged care assessment, Community Options, dental clinic, community rehabilitation centre, Hospice, Centre against sexual assault **Allied Health:** Speech pathology, occupational therapy, podiatry, physiotherapy, dietetics, audiology, social work	**Director of Clinical Services (Acute)** **Clinical Nursing Areas:** After Hours, acute wards x 2, day procedure unit, operating theatre and CSSD, emergency, infection control, pre-admission clinic, satellite, haemodialysis unit, extended site – acute wards, admissions/discharge, post acute care, clinical pathways, diabetes education **Corporate Services Manager:** Budgets, financial planning, general accounts, patients accounts, supply **Engineering Services Manager:** Energy control, gardens and grounds, minor building projects, motor vehicles, plant and building maintenance **Environmental Services Manager:** Accommodation and housekeeping **Human Resources Manager:** Industrial relations, occupational health and safety, pay administration, personnel, staff training and development, security, workcover administration, rehabilitation **Information Technology Manager:** Computer systems development **Linen Services Manager** **Staff Development Officer** **Nursing Operations Manager:** Planning, clinical co-ordination, nursing resource management, nursing continuous quality improvement, complaints liaison officer

6.1.2 Data Collection Methods at BHC

As with all three case studies, data collection at BHC involved questionnaires, individual interviews, and a single team interview. Table 26 provides a detailed breakdown of data collection methods and levels of practitioner participation.

Table 26: Data collection methods and interview participation for BHC

Data collection methods	**Number of participants**	**Discipline Areas**
Questionnaire	83 Multi-disciplinary Health Practitioners	Refer to breakdown in Table 27
Individual Interviews with practitioners	10 Staff *(a sub set of questionnaire participants)*	Medicine (2) Nursing (3) Physiotherapy (1) Occupational Therapy (1) Social Work (1) Speech pathology (1) Dietetics (1)
Group Interviews	1 Team (Stroke Pathways Team) *Staff from this team were also involved in the individual interview process.*	Physiotherapy (1) Social Work (1) Occupational Therapy (1) Nursing (3) Speech pathology (1) Dietetics (1) Medicine (1 – interviewed separate to team)
Individual Interviews with management	2 Management Staff *The Medical Director was also involved in the individual practitioner interview process.*	Director of Nursing Medical Director (also with management responsibility for Allied Health)

6.1.3 Study Participant Summary

BHC participants belong to the eight main disciplines working in service delivery at the study site, with the breakdown of specific levels of involvement across the data collection methods outlined in Table 27. The return rate for questionnaires across all disciplines at the BHC site was 59% (n=83). Allied health practitioners provided the highest overall return rate of 83% (n=15).

Table 27: Level of involvement in data collection at BHC

HEALTH DISCIPLINE		Questionnaire		Individual and Group Interviews	
	Total N	**n**	**%**	**n**	**%**
Medicine	34	19	56	2	6
Nursing	89	49	55	3	3
Social Work	2	2	100	1	50
Physiotherapy	6	5	83	1	16
Occupational Therapy	3	2	67	1	33
Dietetics	2	1	50	1	50
Speech Pathology	4	4	100	1	25
Podiatry	1	1	100		
Management	3			2[a]	67
Total numbers/overall Percentages	**145**	**83**	**59**	**11[b]**	**8[b]**

[a]While 2 management staff were interviewed , they tally as only 1 additional staff as 1 management staff was already included in the overall discipline tally numbers (refer Table ?).

[b]This incorporates the individual that, due to their management/clinician role mix, were involved in a split interview process. This person was therefore interviewed on two aspects of the study but was included in the tally only once.

Individual (health practitioners and management) and group interviews were conducted concurrently with an 8% involvement rate across the study site.

6.2 DIRECTED KNOWLEDGE

Data presented in this section explores the different levels of knowledge about EBP existing among BHC practitioners, and clarifies the impact of the BHC work environment and clinical pathways on practitioner knowledge of EBP. Levels of practitioner knowledge concerning evidence in their own discipline area, as well as evidence used by other disciplines within their multi-disciplinary team, are explored, as are the attitudes of BHC practitioners to the use of EBP.

6.2.1 Pathways to Knowledge

The clinical pathways program was acknowledged by study participants and within formal agency documentation as the central organisational mechanism to introduce EBP to multi-disciplinary treatment decision-making. Feedback from all participants about the reason for the introduction of pathways is effectively summarised in the following extract of interview:

> If you don't actually put it into the day to day working of what people do and the documentation, then it'll disappear. And it's not easy to get evidence into that and that's why

> we ended up having to have a pathway and guidelines that are actually an integral part of the patient's record…if you're not actually signing and documenting and acknowledging that you see what the plan of care is then I think you will get well less positive results than we have, because it has to be part of the day to day work of what you do to maintain the improvements and the quality. Because evidence-based medicine on its own really you can look it up and everything and that team can know what it all is and how we should do it, but unless you've actually got good vehicle for actually spreading it out across the organisation and into the day to day care then I think it's a waste of time (l8).

Given the centrality of pathways to practice within this work environment, it became important to begin analysing results by differentiating between knowledge of EBP as a general concept, and knowledge of evidence within the framework of clinical pathways. Interview feedback found that, of those interviewed and asked to define EBP, eight included within their definition the notion of guidelines, protocols, or pathways. Only three defined EBP against the NH&MRC hierarchy of evidence. Of these, two were medical practitioners with an extensive background in EBP, while the third was a team member who had played a central project role in the search for specific evidence to inform the development of the clinical pathway for stroke. In the broader interview sample, the vast majority of participants closely aligned EBP to pathways, as detailed in the following example of interview responses to this variable:

> Things we can use consistently to say 'These are the guidelines and pathways for how you can achieve best practice'… the best practice guidelines for cardiac rehabilitation that have been a useful process, as well as accessing what other, um other departments are using as theirs, 'cause they're often a good basis for information as well (h8).

Thematic analysis using open, and then selective, coding confirmed the importance of clinical pathways in providing a foundation upon which EBP was applied and largely defined within BHC.

During the interview process, seven of the 11 individual interviewees identified the central role of pathways in defining and bracketing practitioner knowledge of EBP. These individuals commented on the fact that pathways had not initiated practitioners' behaviour change in the short term, or resulted in increased levels of knowledge around using EBP, independent of the pathways. Examples of this feedback are provided below:

> Unfortunately I'd have to say no…I don't think there's that commitment for individuals to go out and find what the latest research and bring it for discussion, I think they have to be led a little bit and I don't know whether that's just the role they have is more junior staff whether it's

> left to the more senior staff to do that type of thing, I think that's the way we've always been a bit hierarchical in [this discipline area] (b8).

> The evidence-based care that we've been able to do through the pathway has been fantastic but it concerns me that it's still just focused on pathways- we still don't have the opportunity, at the bedside to use evidence-based practice in all aspects of care - particularly our nursing homes and I don't know how we can get over that within the timeframe and lack of resources that we have now. So just as a general rule, evidence-based practice still remains a major problem. People don't have time to sit down and do the literature searches and research on everything and we don't have enough computers, we don't have enough resources to truly do evidence-based research and it remains driven from the top rather than from practitioners on the ground (e8).

In direct contrast to these perceptions, a group of interview participants—all senior clinicians—believed that the pathways program had begun to make inroads into modifying practitioners' general knowledge of evidence and the key role it played in treatment provision. The following statements from clinical leaders at BHC depict a program that plays an instrumental role in knowledge enhancement and as a tool for modification of clinical behaviour:

> It's a positive spiral effect or snowball effect that as these people come on board, it just gets better and better…Stroke Pathway, and that's been in place for quite a while now, well, I've got allied health staff members coming to me and saying, 'look there's a conference on stroke management, we want to go to it to make sure that what we feed into the pathway still is the best evidence that's available in that particular area'. So they're keen to build on that …they think that's absolutely fantastic, and so they want to continue to do those sorts of things. I think they get quite a buzz out of doing things as well (n8).

> I think it comes down to why people will change their clinical behaviour… Unless you do something like we've done here, where we would do the hard yards, and have a look at the literature, and put together the evidence and put together something that's easy to follow and then we start to get some acceptance… and the pathways, protocols and checklists we are used are based on evidence, then that will translate across into treatment …it's all there and ready. We've done the hard-yards, it's pre-packaged and they just go and tick and cross as they like. But if we said 'oh well, we want you to come up with an approach that is evidence-based' and they have to do it off their own bat, then they don't have the resources to do that, and probably not the skills either… That's what they want, they want a simple answer …they don't want all the numbers, they don't want all the conflicting evidence, they want people to say, well, yes,

> condition xyz means these three things for treatment, and this is how you do it, boom-boom boom. And it's there clearly on paper and it's not ambiguous (m8).

The last statement, while promoting the notion of changing clinical behaviour, reinforces the need for this behaviour change to be led by a structured process if it is to be successful. While both interview data and agency documentation indicate improved health outcomes as a result of the clinical pathways program, there was a corresponding acknowledgment from the majority of interview participants that the program had had limited impact on levels of practitioner knowledge of EBP.

> A lot of people out there that are using the pathway probably don't think 'this is based on evidence'. They are just doing it because it's there and it's a checklist sort of thing that they can just follow because in such a diverse environment that is very difficult obviously to keep on top of it all at least they know that there are guidelines that show what to do. They don't then have to feel that they might make a mistake. And so we have great success with them with staff (i8).

The questionnaire data provides an effective mechanism to measure BHC staff knowledge of evidence specific to their discipline and outside the parameters of the pathways program. The data found 61.5% of participants had a low-to-medium level of knowledge, while 38.5% had a high level of knowledge. As outlined in Table 28, those in the 'high' category represented only four of the eight disciplines involved in data collection.

Table 28: Knowledge of availability of evidence in own discipline area (BHC)

HEALTH DISCIPLINE		**Low**		**Medium**		**High**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	19	26	5	37	7	37	7
Nursing	49	45	22	10	5	45	22
Social Work	2	100	2				
Physiotherapy	5	20	1	40	2	40	2
Occupational Therapy	2	50	1			50	1
Dietetics	1			100	1		
Speech Pathology	4			100	4		
Podiatry	1	100	1				
Total numbers/overall Percentages	**83**	**38.5**	**32**	**23**	**19**	**38.5**	**32**

Identification of the extent to which BHC practitioners defined EBP from within the bounds of the clinical pathway is not intended to be a criticism of pathways as a means to introduce evidence into a work environment. The aim is to highlight that any assessment of knowledge levels of

practitioners at BHC needs to be undertaken while recognising that EBP has a pre-established definitional framework at this case study site.

Interview data consistently put forward a strong argument that clinical pathways are the most appropriate way for a rural organisation committed to the attainment of best practice to introduce EBP. While the issues specific to clinical pathways and rural practice are explored in detail later in this chapter, the following examples outline the reasons why clinical pathways were viewed as the most appropriate way to use evidence for BHC:

> The real problem there is that the, the volume of data is so large and that most people are just too busy doing their work to be able to, to actually access it, so that they will rely on the development of a protocol by say a multi-disciplinary group, and then follow that. Going to get the evidence yourself is almost impossible, it's just a logistic nightmare. Even if the data is available and the computers are available, it's actually a case of data overload (c8).

> Personally I don't think I've really used any except for the pathways it's just been - just the old [way] of knowing what works and what doesn't which isn't evidence-based at all, because [this discipline area] are poor recorders and to record it all it takes time and effort because we have such a large number to employ - it's just really difficult to give people time off to collect the evidence I think that's a major problem…and with pathways someone collected all the information (g8).

The clinical pathways project, therefore, provided a pathway to knowledge for the use of EBP for BHC practitioners. This research study also sought to identify, via the questionnaire, practitioners' levels of knowledge of EBP independent of the pathways program.

6.2.2 Knowledge and Definition

Quantitative data measured BHC practitioners' knowledge of EBP outside the pathways process. While interview data offered effective definitional feedback, as outlined in the previous subsection, it was specific to a group of practitioners who had worked extensively on a clinical pathways program. The questionnaire provided the means to measure BHC practitioner knowledge of the general concepts and terminology of EBP; the NH&MRC evidence hierarchy; practitioners' skill levels in applying EBP in the workplace; and to ask practitioners to undertake a self assessment of their understanding of the concept of EBP.

Table 29 presents the findings on how much BHC practitioners knew about the terminology and concepts that characterise EBP in the health service sector. The results show that all BHC

practitioners had some level of knowledge of EBP, with the majority of disciplines scoring consistently in the medium to high range. The level of knowledge was highest in dietetics, occupational therapy, and medicine, and lowest in social work, speech pathology, and podiatry. Only four participants rated 'low' on this variable.

Table 29: Level of knowledge of the terminology and concepts of EBP (BHC)

HEALTH DISCIPLINE		Low		Medium		High	
	Total n	%	n	%	n	%	n
Medicine	19			58	11	42	8
Nursing	49	6	3	65	32	29	14
Social Work	2			100	2		
Physiotherapy	5	20	1	60	3	20	1
Occupational Therapy	2			50	1	50	1
Dietetics	1					100	1
Speech Pathology	4			100	4		
Podiatry	1			100	1		
Total numbers/overall Percentages	**83**	**5**	**4**	**65**	**54**	**30**	**25**

While these results indicate BHC practitioners have a good general knowledge of the notion of EBP, the level reduces significantly when tested against the NH&MRC hierarchy of evidence. As outlined in Table 30, the number of participants rating either 'medium' or 'high' decreased from 95% to 49%, while those rating 'low' increased from 5% to 51%. Results for this variable indicate that BHC staff from medicine, speech pathology, and occupational therapy recorded the highest level of knowledge of the NH&MRC hierarchy, and nursing and dietetics the lowest.

Table 30: Knowledge of evidence hierarchy (BHC)

HEALTH DISCIPLINE		Low		Medium		High	
	Total n	%	n	%	n	%	n
Medicine	19	32	6	10	2	58	11
Nursing	49	67	33	25	12	8	4
Social Work	2			100	2		
Physiotherapy	5	40	2	60	3		
Occupational Therapy	2			50	1	50	1
Dietetics	1	100	1				
Speech Pathology	4			50	2	50	2
Podiatry	1			100	1		
Total numbers/overall Percentages	**83**	**51**	**42**	**28**	**23**	**21**	**18**

The questionnaire data also sought to gain insights into the extent to which practitioners at BHC felt they understood the notion of EBP. The results on levels of understanding of the concept of EBP (what it is, how it works, how to use it) are provided in Table 31 and indicate that between 40% and 100% of participants from all disciplines, except dietetics and speech pathology, self-rated as 'low' in this category. The only disciplines to achieve a 'high' rating in this category were medicine (17%), nursing (31%), and physiotherapy (60%).

Table 31: Understanding of the concept of EBP (BHC)

HEALTH DISCIPLINE		**Low**		**Medium**		**High**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	19	42	8	42	8	16	3
Nursing	49	51	25	18	9	31	15
Social Work	2	100	2				
Physiotherapy	5	40	2			60	3
Occupational Therapy	2	50	1	50	1		
Dietetics	1			100	1		
Speech Pathology	4			100	4		
Podiatry	1	100	1				
Total numbers/overall Percentages	**83**	**47**	**39**	**28**	**23**	**25**	**21**

The final area assessed at BHC on practitioners' knowledge of EBP related to the knowledge of the skills needed to seek out and apply evidence to practice. As outlined in the methodology chapter, skill knowledge was tested across a number of domains with the results indicating that the majority of disciplines encountered some level of difficulty in using the skills required for the implementation of an evidence-based approach to practice. Table 32 presents these findings, showing the disciplines with the highest level of skill were medicine and physiotherapy, while the disciplines rating lowest in terms of the skills relevant to EBP were dietetics and podiatry.

Table 32: Skill levels relevant to EBP (BHC)

HEALTH DISCIPLINE		**Low**		**Medium**		**High**	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	19	53	10	31	6	16	3
Nursing	49	53	26	20.5	10	26.5	13
Social Work	2	50	1	50	1		
Physiotherapy	5			80	4	20	1
Occupational Therapy	2	50	1	50	1		
Dietetics	1	100	1				
Speech Pathology	4			100	4		
Podiatry	1	100	1				
Total numbers/overall Percentages	**83**	**48**	**40**	**31.5**	**26**	**20.5**	**17**

Written feedback within the questionnaires also identified the development of skills for use of EBP as an area in which BHC practitioners believed that they needed support. Statements such as 'I currently lack knowledge of skills to incorporate results and bring in changes to practice', 'limited training means I am not as proficient as I would like to be', and 'as a beginning practitioner, I am still developing skills in accessing evidence and this is an issue', provide some additional insights into why 79% of practitioners rated between 'low' and 'medium' in regard to skills and the adoption of EBP, excepting for evidence integrated into the clinical pathways.

6.2.3 Knowledge and Attitude

Despite differences in practitioners' knowledge of and skills in EBP, results indicate that the attitude among BHC practitioners to EBP was extremely positive. The results for this variable, outlined in Table 33, show that BHC practitioners across discipline types achieved a rating between 78% and 100% in the positive category, and saw EBP as beneficial to service delivery.

Table 33: Practitioner attitude to the concept of EBP (BHC)

HEALTH DISCIPLINE		**Negative**		**Positive**	
	Total n	**%**	**n**	**%**	**n**
Medicine	19	26	5	74	14
Nursing	49	22	11	78	38
Social Work	2			100	2
Physiotherapy	5			100	5
Occupational Therapy	2	50	1	50	1
Dietetics	1			100	1
Speech Pathology	4			100	4
Podiatry	1			100	1
Total numbers/overall Percentages	**83**	**20.5**	**17**	**79.5**	**66**

These ratings are in line with interview feedback on BHC practitioners' attitudes to the clinical pathways project. Internal assessment of the project showed a high level of support for pathways, which—while not able to be correlated directly to questionnaire assessments of practitioners' attitudes—is noteworthy, given the definitional link at BHC between EBP and pathways.

> We did do a survey after about 12 months of the team and their attitude, and whether they thought that the work really did measure evidence-based practice in here and about whether they have learnt anything. You know basically whether they've thought the whole thing was worthwhile. We didn't get any negative results. A few 'not sure' but the rest either 'agree' or 'strongly agree' for everything…over a 75% approval rate across the board and some of them were higher (j8).

A conditional comment is warranted on the attitudinal results discussed to date. Acknowledging that the data shows BHC practitioners' attitude to EBP and pathways to be extremely positive, it is, nonetheless, important to flag an issue on the level of resistance from some BHC staff encountered during the data collection process. Questionnaires were distributed to 143 BHC health practitioners. Of these, six practitioners (a statistically small 4%) were very vocal in their resistance to data collection. Their uncompleted questionnaires were returned with angry written comments that highlighted some negative attitudes in relation to measuring the adoption of EBP across a work environment. Comments such as, 'Who are you to ask about EBP? This is all academic rubbish, go and do some work in the real world', and 'EBP and your questionnaire are just more garbage from people who don't know what they are talking about' could indicate there are some attitudinal issues around EBP at this site. This is particularly so given that, while 4% is statistically small, BHC was the only location across the three sites studied where participants chose to register a specific protest to a voluntary process in which they could simply have chosen not to participate.

6.2.4 Directed Knowledge: Summary and Discussion

In summary, BHC is an organisation that adopted an organisationally managed process to maximise the use of evidence to inform practice decisions. This is not a unique approach as pathways and clinical guidelines have consistently been identified by the health sector as an effective mechanism through which to enhance adoption of EBP (Ecceles & Grimshaw 2004; Feder et al. 1999; Grimshaw & Russell 1993; Grol et al. 1998). Interview feedback identified that without organisational support for implementation of EBP through the pathways, BHC practitioners did not have the knowledge, skills, or resources needed to adopt the paradigm independently. The importance of organisational support for the introduction of EBP is well documented in the literature (Denis et al. 2002; Ferlie et al 2001; Gosling, Westbrook & Coiera 2003; Retsas 2000), and recent analyses of processes for enhancing implementation of EBP signal the need for specific support units in health services to overcome the barriers to uptake within institutional settings (Davis et al. 2003; Robinson & Turnbull 2004). Pathways were the clinical change process introduced by BHC to manage these barriers.

Acknowledging this, interview data highlight that the clinical pathways program, while improving health outcomes, had had minimal immediate impact in enhancing practitioner overall knowledge of EBP, as evidenced by quantitative data analysis. As identified by Ferlie, Barton and Highton (1998) knowledge flow across organisational contexts is difficult, and the feedback from BHC participants supports this in relation to EBP outside of the clinical pathways process.

While BHC practitioners had a strong general knowledge of EBP, this diminished as practitioners were required to move from a general to a specific understanding of the concept. In line with previous study findings, higher levels of knowledge of EBP were identified among disciplines from a scientific tradition, such as medicine and physiotherapy (Cochrane, 1999; Dawes et al 1999; Ferlie, Wood & Fitzgerald 1998; Sackett et al, 1996), while lower levels were found among disciplines such as social work (Gambrill 2003a; Hemmings, 2000; Rosen, Proctor & Staudt 1999; Shaw 1997; Sheldon 1998; Webb 2001).

In a duplication of the QHS case study findings, the data also identifies that practitioners across discipline areas consistently assessed they needed support to develop skills in accessing and analysing evidence. This mirrors contemporary research findings from all health discipline areas (Doust & Silagy 2000; Dysart & Tomlin 2002; Gambrill 2003b; Green et al. 2000; Howard, McMullen & Pollio 2003; McAllister et al. 1999; McCluskey 2003; McKenna, Aston & Keeney 2004; Newman, Papadopoulos & Melifonwu 2000; Retsas 2000; Straus & McAllister 2000; Swinkels et al 2002; Upton 1999a; Welch 2002). Finally, in line with findings of studies such as those of Guyatt et al. (2000), McColl et al. (1998b) and Taylor et al. (2002), the vast majority of study participants supported the use of evidence in practice for their discipline area.

6.3 LOCALITY-SPECIFIC CONVENTIONS

This section presents data that focuses on and seeks to illustrate the unique and locality-specific approaches taken by BHC in implementing EBP. The data are noteworthy in that they highlight the limitations of assuming the capacity for universality in developing approaches to encourage uptake of EBP. Approaches that are underpinned by a ‘one size fits all’ strategy fail to consider the importance of locality-specific conventions in shaping practitioner views, organisational options, evidence applicability, and, ultimately, uptake levels. As identified in chapter 3, a significant amount of work has been undertaken which assumes a process and practice link unencumbered by the imperatives that originate from the locality in which the process is being implemented. The data presented in the following pages show, in stark contrast, the sphere of influence of local approaches on EBP uptake.

The following subsections present the thematic findings of the interview data around:

- the establishment of facilitated pathways and the ways in which this local mechanism for the introduction of EBP has impacted on practice;
- the importance of localisation of evidence-based guidelines to rural practice;

- the role of clinical champions in implementing EBP across the study site; and
- the importance of administrative champions in accessing data for the implementation of EBP across the study site

6.3.1 Facilitated Pathways

Clinical pathways were identified, in the previous section of this chapter, as a central mechanism, developed and promoted by clinical managers, to enhance best practice and ensure the uniform application of evidence-based treatment approaches across discipline areas and multi-disciplinary teams at BHC.

In this rural environment, an informed choice was made to introduce a centralised and directed process that reflected an organisational commitment to quality using EBP. As part of the agency-driven promotion of EBP, BHC sought to maximise the effectiveness of the pathways program through a process of facilitation. A project person—with the specific roles of identifying evidence, liaising with staff, developing the pathway, and supporting it through the implementation process—resourced the pathways program. BHC staff considered the pathways program—and the fact that pathways are facilitated—integral to any process of introducing EBP.

> They have to actually put their money where their mouth is. It wouldn't work otherwise. I think the facilitation's really, really important. See we've had care patterns in the past but they were just written out according to what was current practice here in this hospital, not from an evidence-based perspective (f8).

> We were lucky in our groups because we had facilitators who did the hard work and did the literature searches, found appropriate articles to give us the evidence-base. We then read them and we were able to discuss them, and whether we had to go out and do all that ourselves; I doubt it…If you haven't got someone to pull out their wallet and employ them it wouldn't have happened (k8).

Interview data depicts a practice context in which EBP and clinical pathways are indivisible. This local convention for the introduction of EBP, while not unique to the health service sector, is unique within this multi-site study. Agency documentation that identified the following clinical improvements, and linked them directly to the clinical pathways program, demonstated the extent to which the approach improved health outcomes:

- immediate Aspirin for cardiac patients (up from 79% to 100%)
- cholesterol measurement for cardiac patients (up from 56% to 100%)
- average door to electrocardiogram time (down from 12.2 minutes to 4.1 minutes)
- swallow assessment for stroke within 24 hours (up from 52% to 96%)
- Aspirin for eligible stroke patients within 24 hours (up from 38% to 95%)
- neurological observations—stroke (up from 24% to 75%)

These statistics are reinforced through anecdotal evidence such as the following:

> The benefits are huge, the guidelines within pathways have really enabled us to make those improvements, and without those guidelines, what we had before was an inadequate approach to treatment…the guidelines actually allow you to maintain the standard, or what is considered best practice for that disease…the improvements for how many people we give aspirin to immediately for a heart attack or within 24 hours for a stroke, have gone from only about 37% for strokes to 100%. Heart attacks from 80% to 100%… there's a lot of acceptance, particularly in my ward, for the pathways. How much they understand it's because of the evidence, although when I did start to teach we explained why we were doing a lot of things but you don't expect everyone to remember all of that happened (w8).

For the BHC site, facilitated pathways were promoted as integral to driving professional development and clinical behaviour change around EBP. Interview feedback and agency documentation suggest that many targets were achieved around health improvements and behaviour change specific to the use of pathways. Acknowledging this, the impact of the clinical pathways program on the professional development of practitioners about EBP is unclear—available data suggests that any impact was minimal. Importantly, the extent to which practice was evidence-based, outside of the scope of the pathways, appears to be slight. The lack of evidence available to inform rural practice, and the fact that pathways were not developed across all treatment areas at BHC, are contra-indicatory to achieving a high level of uptake of EBP. Analysis and consolidation of questionnaire data identify that across all disciplines the most common mechanisms used as an evidence-base to inform practice were journal articles, colleagues from own discipline, professional development, initial formal training, and practice experience. Across disciplines, the least-used evidence bases were systematic reviews and input from clients. Importantly, despite the fact that the pathways program was the central mechanism for EBP introduction at BHC, no respondent identified this, even though the questionnaire gave the option to enter unlisted evidence sources. An overview of results is depicted in Figure 11.

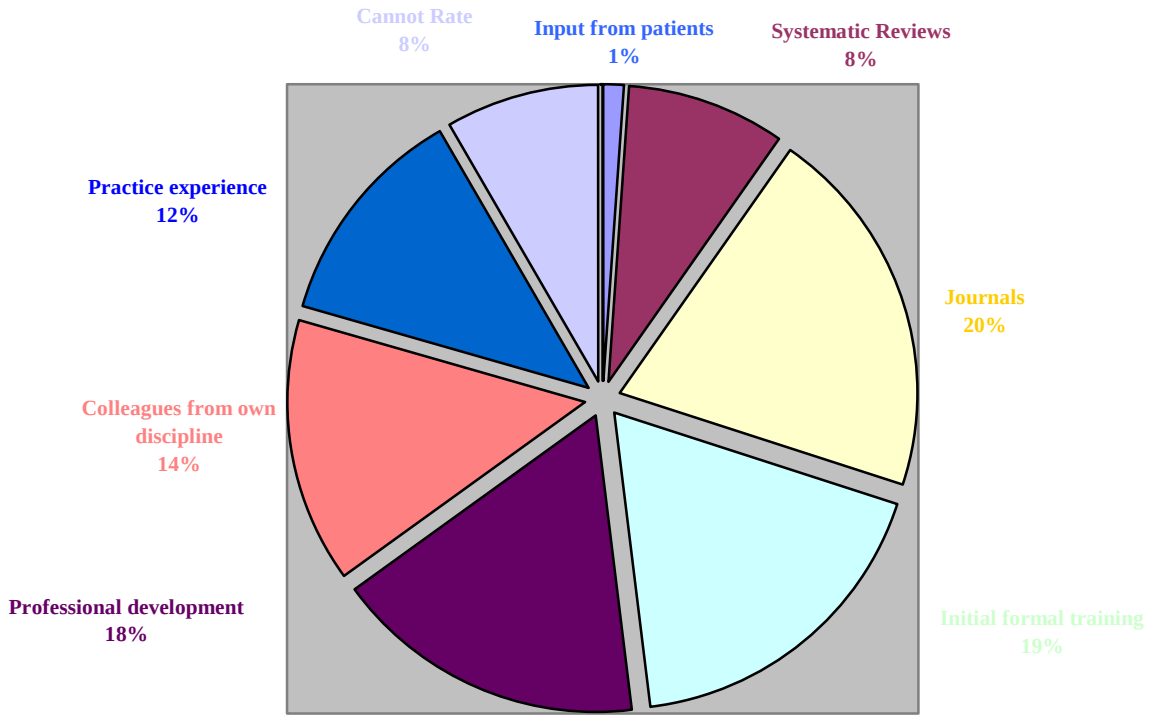

Figure 11: Most Often Used Evidence Types Across All Disciplines (BHC)

Questionnaire rankings of the different types of evidence used to inform practice were also collated into specific groupings to enable a discipline-based comparison of levels of use of different types of evidence. These groupings were categorised as ‘Evidence Types with a High Frequency Usage’ or ‘Evidence Types with a Low Frequency Usage’ and represented a cross-tabulation of frequency of use and level of ranking across the questionnaire sample. As outlined in the methodology chapter, a clustering strategy was used to accommodate the large number of variables created by ranking the ‘types of evidence used’ at BHC.

The categorisation ‘Evidence Types with a High Frequency Usage’ refers to the clustering of the most commonly used approaches to inform the practice of BHC practitioners and incorporates these evidence types:

- journal article information
- clinical experience
- initial formal training
- collegiate input—same discipline area
- professional development activities

The questionnaire results on the percentage use of these methods by different disciplines, depicted in Figure 12, show a much higher proportional use of evidence types at the lower end of the NH&MRC hierarchy of evidence.

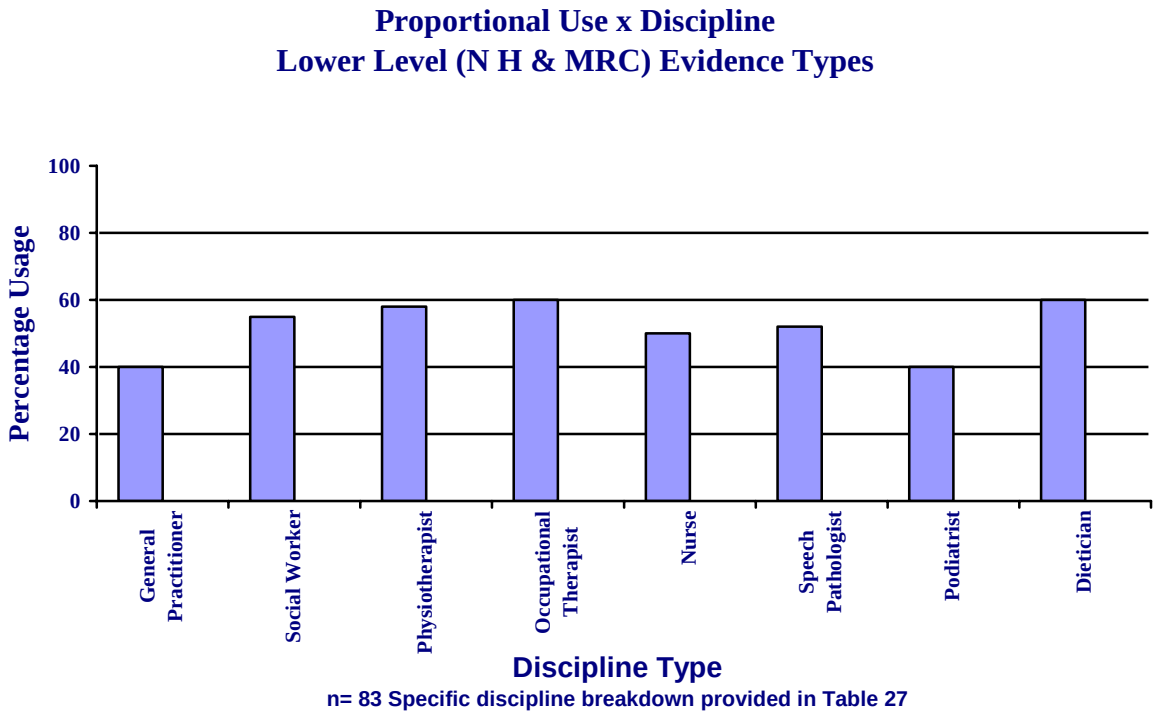

Figure 12: Evidence Types with a High Frequency Usage

While 'Initial formal training' could, arguably, be put forward as a structured and scientific mechanism to inform practice, it is important to consider the length of practice of BHC practitioners in instances where current, scientifically based, approaches are taught as part of undergraduate training. Fifty-nine percent (n=49) of BHC study participants had practised for more than 15 years,

and almost half (43%; n=21) of these had practised for more than 25 years. Given the contemporary nature of EBP, this brings into question the degree to which—for a significant proportion of practitioners—initial training can be listed as a formal mechanism through which to access the most recent evidence on particular treatment regimes. Journal articles and professional development both provide a vehicle through which practitioners can access the most current evidence for treatment, although it is not possible to determine the type and content of journal article information accessed. In order to gain some insights into the extent to which practitioners pursue structured mechanisms to increase the link between practice decisions and EBP, practitioners were asked to identify the professional development activities related to EBP they had pursued. An analysis of the activities undertaken by practitioners in the six months prior to distribution of the questionnaire shows the majority of participants had undertaken some recent activities linked to EBP.

The data (depicted in Table 34) lists a high proportion of staff involved in reviewing/accessing evidence during the six months prior to the study. This is at odds with interview data, in which staff indicated there was limited review or accessing of formal evidence outside the pathways program. A more detailed analysis of the interview transcripts around issues of professional development suggests that professional development has a very broad definition at BHC. It includes the very valid, but often not structured evidence provided by networking, collegiate feedback and attendance at conferences. This trend is captured in statements such as:

> I probably get on the internet and look up some articles… I might also go to text books which have been written based on the research that's been done…I also just use the knowledge of other therapists and pathways and that's a really important one because although you can read it in an article sometimes people, their experience and whether or not that particular technique has worked for them I think can be even more useful sometimes (t10).

> I think that way that the evidence-based practice, it's more ground level. Yeah, that's how I view it anyway. It's more, hands on, it's coming from clinicians, it's coming from reports and from your own practice and other workers in the rural area. I think that's the benefit of it rather than something much more academic or something along those lines (u10).

Despite the emphasis on the pathways program, the number of practitioners who had used clinical pathways varied significantly across discipline areas, with social work and occupational therapy indicating the lowest level of use during the six months prior to the study.

Table 34: Activities undertaken linked to EBP- previous 6 month period (BHC)

HEALTH DISCIPLINE	Review/access evidence to inform practice decision	Undertaken professional development related to EBP	Used clinical guidelines to inform practice	Activities undertaken to seek evidence to inform practice:
Medicine	13 (68%)	12(63%)	18 (94%)	Practice audits Professional networking Journals/books Conferences
Nursing	36 (73%)	23 (47%)	27 (55%)	Organisational research Practice audit Professional networking Conferences
Social Work	2 (100%)	-	1 (50%)	-
Physiotherapy	5 (100%)	4 (80%)	4 (80%)	Practice audits Professional networking Conferences
Occupational Therapy	2 (100%)	1 (50%)	1 (50%)	-
Dietetics	1(100%)	1 (100%)	-	-
Speech Pathology	4 (100%)	3 (75%)	4 (100%)	-
Podiatry	1(100%)	-	-	Organisational research

The categorisation 'Low Frequency Usage' refers to the clustering of the least common approaches identified in the questionnaire as used by BHC practitioners to inform their practice. It incorporates the following evidence types:

- randomised control trials (RCTs)
- systematic reviews
- patient input
- input by colleagues from other discipline areas

Figure 13 depicts the least-used methods to inform practice at BHC, and shows a low use of scientific methods to inform practice across all discipline areas. Low frequency usage methods included patient input and input by colleagues from other discipline areas.

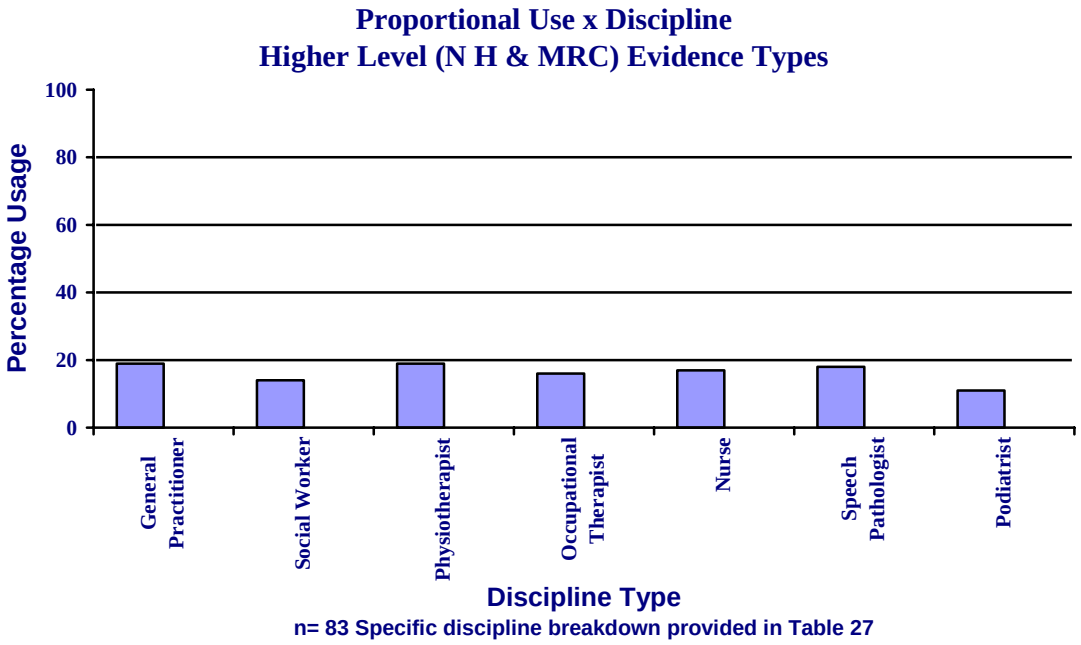

Figure 13: Evidence Types with Low Frequency Usage

The limited use of scientific evidence was credited, partly, as having resulted from a general lack of available scientific evidence. All participants across all discipline areas identified that the availability of high quality evidence to inform practice decisions was limited. This view is clarified in the following statement:

> If you're saying 'is there high quality of evidence for a large proportion of what's done?', well the answer is clearly no. But the evidence that's available is a small part of things and it's biased towards the things that people have been interested in doing research on. So there are large slabs of things here that are probably the unexciting things, not involving pharmaceutical products, and therefore profits, so there's large parts of medicine that are not adequately researched and not scientific (l9).

The limited availability of evidence such as RCTs and systematic reviews relates to individual discipline areas and to the specific complexities of rural practice. However, interview feedback reinforces that limited use of evidence was also partly due to a tendency not to seek evidence outside the pathways program, for reasons outlined previously in this chapter. The extent to which

this played a role in determining whether practitioners accessed scientific evidence is not measurable within the parameters of this study, but it is acknowledged as a factor consistently identified by all study participants as influencing evidence choices.

These data are a quantitative measure of the fact that the uptake level of formalised evidence structures remained low in an environment where a structured process of clinical evidence-based pathways had been introduced. Data indicate that processes at the lower end of the NH&MRC evidence hierarchy (such as clinical experience and collegiate input) informed decision-making between 40% and 60% of the time, while formalised processes such as RCTs ranked as informing practice significantly less than 20% of the time. These findings reinforce that EBP remains a peripheral part of daily practice, despite the notion of facilitated pathways.

Clinical pathways at BHC, in addition to being facilitated, were also customised to specifically meet local need. Interview feedback identifies the importance of localisation of guidelines to effective practice outcomes and guideline uptake. Before examining the data relating to customisation of guidelines, it is important to clarify that the terms ‘facilitated pathways’, ‘pathways’, ‘clinical pathways’, and ‘clinical practice guidelines’ were used interchangeably by BHC staff. All references to guidelines in the next subsection, except where specified, relate to the clinical pathways program.

6.3.2 Guidelines Customisation

The rationale for introducing a localised and customised guideline for practice—in preference to a generic guideline provided by a peak body such as the NH&MRC—was identified consistently by interview participants as important to effective practice in a rural environment. Guideline customisation was promoted as a response tool to address unique issues of rural practice such as resource limitations and rural isolation, and was also identified as a primary means to enhance ownership of evidence-based approaches and ensure increased levels of guideline compliance.

Guideline customisation and resources for rural treatment provision

Health service provision at the BHC site had a different level of resource availability to larger regional or metropolitan service sites. Smaller staffing profiles and reduced service capacity, in comparison to larger centres, had immediate implications in relation to the use of guidelines. Established clinical guidelines often needed modification to ensure they remained updated and responsive to local need. The following statements effectively communicate the ways in which a generic guideline, developed in a metropolitan location, fails to be transferable to rural practice:

> It needs to fit the circumstances for your organisation so that, on some of the pathways, we see things like, 'this should happen on day 3', but that won't happen if it's a weekend. In organisations that are larger you would have a 7 day a week service; things could happen on certain days, whereas here we have to leave some flexibility within working times, and we don't do 7 day cover. So that highlights how important it is to have pathways that directly suit the environment in which you're working and made to suit the organisation (x8).

> [Localised pathways] it's suitable for what goes on at the local level, it's not pie-in-the-sky, it's not saying you should get MRI done when it's 400km round trip to get an MRI. That sort of thing (d9).

Importantly, BHC practitioners recognised that, just as generic guidelines cannot be adapted readily to the rural context, there are differences across rural areas that mean it is not possible simply to develop a set of generic guidelines applicable to all rural areas. The level of diversity across rural practice is such that, for guideline customisation to be effective and responsive, it must take into account locality specific issues at all times.

> We've had people asking us for our pathways to take to smaller hospitals, and so we point out that they needed to come and see what the process was rather than actually just taking a part of it because there are things that they can't do. So therefore that's not relevant or, them doing things they know how to do, it's different from us doing it and they can't get levels and things immediately like we can. We found out we couldn't deal with some issues because we're a smaller area and we also have a problem with people reading our CTs immediately and having the expertise. You really have to customise it and we certainly couldn't take some things and run it here without looking at the problems that we have compared to them (y8).

The issue of resource availability extends beyond access to the aids and equipment needed to implement approaches designed in larger service centres. All interview participants referred to time restraints; lack of hardware, such as computers; and the inability to access professional development on EBP as a result of geographic isolation and the associated inability to backfill staff positions. This resource scarcity provided a motivator for developing customised guidelines as a best-fit response in an environment where it was felt that staff had neither the time nor the skill base to absorb and adapt generic guidelines to the specific needs of their rural practice.

> If I come out with the last NH&MRC guidelines….well, for starters, the first thing they came out with was on the management of breast cancer. I don't know how many pages it was, but it was very thick. There's no way that someone at the coalface can come to terms with a document of that size. Someone has to do the culling. Work out what are the significant process

> things that need to be in place, that will really make a difference here, and then start to put them in so that they're easy to follow, for the general practitioner or the specialist coming in from outside. So they've culled the material and got it into a useable format (d9).

Guideline customisation and rural isolation

Customisation of guidelines was also identified as an important tool through which to meet the needs of local communities, particularly in terms of the isolation of rural service users. Many of the generic guidelines assume a degree of access to on site equipment (such as an MRI) to respond to particular treatment conditions, and also often assume a capacity for patients to readily access staff (and vice versa) and services post discharge from an acute facility. Interview participants identified that rural isolation needed addressing by a localised guideline if treatment was to remain as responsive and evidence-based as possible.

> So both understand what's required and what is important information in the area, for instance being in such an isolated area, people can live kilometres away from the township and also kilometres away from the nearest neighbour, whereas in the city that may not be a factor that's intrinsic to their care, whereas a discharge to the local area on the outskirts is. I mean it needs to be localised, you need to have that knowledge and have it written down for other staff to notice as well. I think on a local level it's made a difference (c9).

Guideline customisation and practitioner ownership

The final motivator for the development of customised guidelines was the belief that localisation and customisation were integral to practitioner ownership and uptake of clinically prescribed approaches to practice.

All interview participants indicated the choice to customise guidelines at the local level and their ability to have input into the process were instrumental in the degree of success achieved by the clinical pathways program. The following extracts represent the entire BHC interview sample and provide some valuable insights to the importance of guideline customisation in empowering individual practitioners to feel they have some ownership of prescribed treatment regimes:

> In Allied Health, because they're smaller departments and we were all involved in every pathway… and that was brought back to our department meeting so there more of an 'owning' by the whole department, not just me saying 'Oh, I've been to another pathway meeting and you now have to do this'. Everyone felt that because they were part of it, that we had to try and get our bits done when it was important (z8).

> It's important for it be localised and for it to be put together by the team that are actually having to use it because then it's the way we like it and we would run it the way we've been trained to run it. If someone just handed me say all these sections from the pathways and said this is what [this discipline] has to do I'm sure we would look at, it might be all right but we might not be happy and if we weren't happy with it then that wouldn't be very good so whereas we've discussed them and we've made corrections and so they're all things that we're familiar with and that we've put together and that makes it a lot easier to use (a9).

Therefore, the capacity to customise and localise was trumpeted as pivotal in achieving effective adoption of best practice through the vehicle of evidence-based clinical pathways and also in maximising applicability of practice approaches to the specific needs of the rural community serviced by BHC.

The final areas in which location-specific conventions were followed at BHC relate to the development of dedicated supports at the administrative, clinical, and management level of the organisation, aimed at enhancing implementation of EBP through the clinical pathways program.

6.3.3 Clinical and Executive Champions

Documentation provided by the agency shows that BHC had a strong commitment to the use of clinical and quality champions in helping reduce risk and increase the use of evidence in practice (BHC journal documentation 2000). Clinical champions were in place, across disciplines, to lead the change process. Executive champions, at the management level, had the brief to minimise delays in implementation of clinical change processes and provide support to multi-disciplinary teams in problem-solving processes, while Board of Management champions had been allocated the task of providing governance to facilitate the introduction of clinical change processes.

In the interviews, clinicians consistently showed a limited knowledge (or interest) in the role of Board of Management champions and/or—with the exception of supervisory management level clinicians—executive champions. The role of these champions was identified by management participants who outlined the interrelationship of these roles in championing the cause of quality improvement at BHC.

> The Health Care Group has a quality improvement Board sub-committee that reports regularly to the Board of Management… The committee is made up of Board members and a range of different clinical people, executives, management people, quality manager and usually nursing representation, a complaints liaison officer also sits on, and there is someone from the Aged Care Area that reports on quality improvement activities so that all of the quality improvement

> activities that is going on across the organisation feeds into that committee… the executives are all on the improving performance committee. So essentially we work towards achieving [quality standards] (k9).

Executive champions, in particular, were identified by supervisory and management staff as having a pivotal role as individuals with both clinical and executive management portfolio responsibility, in what was depicted as a planned, interrelated process driving quality practice (including the use of evidence) at BHC.

> I think because we've actually got a medical and nursing executive member does make a difference because they are your two professional groups… someone like [the medical director] is always looking at any active program being developed here based on quality improvements, clinical things… I think if you don't have some of those things in place then you are not going to be able to look at evidence-based practice (g9).

Therefore, while the majority of clinical staff made limited reference to these aspects of the quality program at BHC, available feedback highlighted the importance of these roles in supporting the introduction of evidence through the pathways program. This was especially true when the clinical champion and executive champion were the same individual working across dual roles. This approach provided the clinical champion with added capacity when it came to pushing issues at the executive level. The clinical champion was identified as having a pivotal role in introducing quality initiatives, leading the implementation of initiatives in practice, and helping minimise levels of resistance to change. The clinical champion's importance was referred to by all participants, with the following statements reflecting the general themes put forward during the interview process:

> It is quite critical to have a clinical champion. It was what we needed and what we had…There are going to be personalities out there that no matter what you put to them, how much proof you've got, they are still set in their ways of doing things, are very rigid and don't want to look outside their square to take on board new things. I think that was the most difficult task; taking them outside the square and trying to get them to look at it (q8).

> Clinical champions and having medical staff who will support the process…you need to have management who are committed to the process who will pay someone to do all of that for you [search for evidence]. You just cannot do it within the clinical area and I certainly couldn't do it now with my other job. It would be unreasonable. So I think all those things are really important- putting the resources into it and having the clinical champions and then giving other people support to do it (r8).

> So it needs a clinical champion who will be open-minded and then will adopt to new evidence, and then drive it through with the rest of medical staff, and say, 'look, this will provide high quality care for your patient, will reduce mortality and morbidity, there are benefits from doing it this way'. And it does need the input of the speech therapist, and the physiotherapist and dietician and they've all got bits to add to it that will enhance the quality of care (t8).

The importance and impact of clinical champions was highlighted when study participants were asked to identify who played a central role in driving the uptake of the pathways initiatives within the BHC work environment. While data from clinical management identified that executive level support was the central determinant in adoption of EBP, the following interview extract reflects the extent to which the clinical champion influences the actions of grass roots clinicians:

> *Researcher*: I get a sense that your organisation is run in a big way around clinical leaders and clinical champions.
>
> *Respondent*: Very much so yes. Which is quite surprising when you think how small an organisation we are. I mean all those grass root [staff] would know who [the manager] is but it's still [the clinical champion] that matters (in terms of introducing initiatives and changing behaviour) (o8).

In summary, clinical and executive champions, while not unique to BHC, are locality-specific conventions viewed and implemented as integral to EBP uptake. Along with customised guidelines and facilitated pathways, they create a complex and integrated approach to quality aimed at overcoming problems, such as those outlined in the following interview extract:

> I think there's a growing awareness of the importance of the evidence in particular areas, but I think it requires a fair bit of training of people regarding the importance of this sort of thing… I've seen them come along to talks to evidence-based and when all those figures come up, a large number of them don't really know how to interpret all that data, so they're going to be influenced by the clinical leaders who will go through the information…. The clinical champions are key people, the same with the executive champions, and they just get the whole ball rolling (s8).

The notion of an administrative champion to support staff in accessing data relevant to EBP is not (unlike executive and clinical champions) an organisationally driven initiative for quality improvement. Despite this, BHC's administrative champion (the librarian) was critical to any implementation of EBP, and was a locality-specific factor instrumental in its adoption.

6.3.4 BHC, Data Access, and the Administrative Champion

The most common theme to emerge in relation to practitioners accessing data for adopting evidence-based approaches to practice—both in terms of establishing clinical pathways and accessing evidence outside the pathways program—was the role of the BHC librarian. All participants referred to this person (rather than the position) as a central reason why BHC practitioners have the capacity, if desired, to use EBP. Examples of feedback include:

> She's certainly an invaluable resource 'cause you sometimes think 'Where do I even start to look?' and it's amazing, how much she can find and do for you…I do my own searches on the internet and think 'Oh surely there's an easier way' and there is, if you are at it all the time, but that generally is not an option - so having access [through the librarian] is really important (f9).

> So if someone went there and said 'I'd like to know what the evidence is for XYZ treatment', she would either find it on the shelf or have it for them later that day…the original research and review articles and those sorts of things… She would fall over backwards to get that information for you (j9).

In addition to accessing data, the librarian established a formal process to help keep staff informed of the most current evidence across discipline areas and multi-disciplinary teams.

> Our librarian is fantastic…ensures that every journal that comes to the hospital, the front index gets photocopied, put in a big fat thing that comes round, we can read through it and highlight articles we'd like a copy of and she'll do that, so some really good systems in place to ensure that you're reading up on things that are of interest or areas you're probably knowledgeable in (i9).

The importance of the librarian in supporting staff data access was identified as particularly relevant in a rural context where there is limited access to professional development opportunities, variable degrees of isolation from collegiate input, and restricted capacity for networking. The role of the librarian in overcoming these rurality-specific constraints was raised by ten of the eleven interview participants. They also raised the value of this role in providing a centralised access point to smaller and more remote health services within the geographical area that did not have access to the resources of an administrative champion.

> When you are in a rural health service, you tend to keep your ear to the ground a bit more and you rely on people in bigger centers to feed you back information. The library here is a source of updated information; the librarian gets requests from all over the countryside to get

> information on journals and it is something that the staff here have found to be really valuable and if they want to know something or find out something they just go there she'll get it (e9).

Clinicians were asked to assess the extent to which the availability of an administrative champion influenced the ability of practitioners to adopt evidence in practice. While BHC practitioners had a good capacity to access information through electronic support services such as the Clinician's Health Channel, the librarian (as distinct from the library service) was put forward consistently as the most valuable mechanism outside the prescribed pathways program to access evidence for practice. The importance of this role was summed up effectively in the response to this question: 'If you took the library out of the equation as the smaller health services often have to do, where would evidence-based health care sit?'. The response given was: 'With great difficulty…you can't subscribe to every journal and if you don't have access…then you would not know about it and could not use it (h9)'.

6.3.5 Locality-Specific Conventions: Summary and Discussion

A summary of the data examined in this section reinforces earlier findings that the pathways program, while improving health outcomes at BHC, had had minimal impact on expanding practitioner knowledge about EBP. While those involved in the stroke pathways team had a good understanding of EBP, this was not reflected in the statistical data, which drew responses from a larger respondent pool across BHC. Both qualitative and quantitative data testing confirms that the majority of BHC practitioners used mechanisms that are either low level, or not present, on the NH&MRC hierarchy of evidence.

In a changing health environment where EBP is a centrepiece of best practice, low knowledge levels about the paradigm is potentially problematic. This is true in terms of individual professional development and in establishing an organisation-wide, evidence-based culture. This assessment is made in recognition that the data indicates the constraints of rural practice (which will be outlined later in this chapter) mean the adoption of EBP is unlikely to be achieved without active, funded, and targeted organisational action.

BHC has worked effectively to ensure the success of the pathways program is enhanced by:

- Funding an individual to take on the role of pathways development. Facilitation of guidelines/pathways is a process promoted in the literature and identified by Richman and Lancaster (2000) as a successful mechanism for supporting the introduction of responsive,

multi-disciplinary evidence frameworks. Of note is the consensus that without this facilitation the pathways program and, through this, EBP would not have been put in place.

- The use of clinical and executive champions. There is strong support for this strategy from study participants and in the research literature. Ferlie, Barton & Highton (1998) and Ferlie and Shortell (2001) highlight the importance of promoting uptake across all levels of the organisation and identify the critical role of targeted individuals within management to facilitate change. Further, clinical champions (often referred to as opinion leaders) have been consistently identified as pivotal in the successful introduction of EBP (Bauchner 1999; Bero et al. 1998; Dopson et al. 2002; Ferlie et al. 2001; Greco & Eisenberg 1993; Grol 1997; Guyatt et al. 2000; Lomas et al. 1991; Phillips, Rubin & Morey 2000; Silagy & Haines 1998).

- The localisation of guidelines. All interview participants identified that the nature of the rural service delivery environment negated the capacity to directly transfer evidence guidelines developed in a metropolitan location to a rural setting. Contextual differences, and the need to promote ownership of the pathways, informed the customisation process. This strategy has been confirmed in available literature as effective in promoting ownership and ensuring guidelines are appropriately tailored to meet local need (Bero et al. 1998; Ferlie et al. 2001; Grol 1997; Lomas et al. 1991)

A final point on locality-specific variability. The pathways program and the use of evidence in practice were closely linked at BHC by the availability of good library facilities and an administrative champion. Rigby et al. (2002) promoted the importance of the 'clinical librarian' in supporting the adoption of EBP, based on the experiences of the Barnet Primary Care Trust in the UK. In a similar way, the BHC administrative champion was consistently identified as the linchpin in maintaining practice currency in a rural location. Given that questionnaire data identified skill levels in accessing and applying EBP were 'low' to 'medium' for 79.5% (n=66) of BHC participants, the librarian provided excellent support in achieving an enhanced level of quality in service delivery. It is important to highlight that participants clearly stated that, given the constraints of rural practice, accessing of evidence, without the librarian, would be minimal.

6.4 PRACTICE EQUALISATION

This section focuses on study data specific to EBP within the context of the clinical pathways program and considers the impact of this initiative on intra-disciplinary relationships at BHC. Practitioner perceptions of the way clinical pathways have allowed for increased validation of

multi-disciplinary practice approaches are presented, as are views on issues of equality of input and professional validation. The data also depicts the extent to which traditional role structures are maintained, despite an organisational commitment to multi-disciplinary practice and the ways in which resistance to change impacts on implementation of EBP in the work environment.

The emergent themes from this data, presented within a series of specific subsections, are:

- multi-disciplinary practice imperatives
- professional validation
- medical dominance; and,
- change resisters

6.4.1 Multi-Disciplinary Practice Imperatives

Multi-disciplinary practice was consistently identified in all interviews as the most common approach used in service delivery at BHC and as fundamental to the development, implementation, and success of the clinical pathways program.

> [The clinical pathway] was just a natural progression, we wouldn't have dreamt of putting together a pathway that we all weren't involved in because that is the way we practice. It is very important to us all to work as a team (w9).

This feedback is in line with contemporary literature that documents the importance of the multi-disciplinary team in health service practice (Nandan, 1997; Soothill et al, 1995; Wolf, 1999; Garner and Orelove, 1994; Gill and Ling, 1995). Contemporary literature also promotes a service system philosophy of using multi-disciplinary team approaches, regardless of organisational size, in health service delivery (Australian Health Ministers' Advisory Council, 1996; NRHA, 1999; WHO, 1999; Commonwealth Department of Health and Aged Care, 1999c; National Expert Advisory Group on Safety and Quality in Australian Health Care, 1998). Acknowledging this preliminary assessment of compatibility between service system imperatives around multi-disciplinary practice and the operational approach of BHC, it is also important to consider the environmental factors that influence adoption of multi-disciplinary practice at this study site. In many regional and metropolitan health sites, such as the QHS site, there is the capacity, due to organisational size and staffing levels, for health practitioners to be part of a specific, discipline-based, departmental group, and for individuals within this group to be involved in a number of multi-disciplinary teams, dependent on their field of expertise. While multi-disciplinary teams are in place or developing

across larger sites as a mechanism to enhance patient outcomes, they often exist alongside discrete work units or departmental teams. BHC (an ARIA-rated 'B' site), is a smaller organisation with a structure of mostly between one and four staff per discipline area. Any team, to be viable, almost always comprised individuals from a number of different disciplines who, of necessity, sought support and direction from within the multi-disciplinary team, regardless of organisational or service system philosophies around multi-disciplinary practice.

> In a rural environment you're working with this number of resources and you actually need to come together more as a multi-disciplinary team…in the metro environment where you've got a whole lot of different services that you can send someone to…the difference here is we are the acute, we are the rehab, we are the discharge planning…we do it all. (o9).

> Because of issues of isolation and working without lots of peers, there's a greater dependency on accessing information and getting that right [across the team of people you are working with], whereas sometimes in large organisations, in departments, it can be easy to be very insular and not necessarily think of others (v9).

This highlights a unique aspect of rural practice; that is, operational approaches to practice are imposed by the constraints of location as well as by choice. While the multi-disciplinary approach is embraced and assessed as beneficial to practice at BHC, this organisation—as a rural health provider—had no other option than to develop strategies on how to work through the professional relationship and practice issues arising as a result of size and rurality. Strategy development is pivotal to ensure holistic approaches to service delivery that meet the needs of patients *and* practitioners, and the development of mechanisms to enhance the ways practitioners from diverse disciplines work together. Clinical pathways represent an evidence-based structure to formalise a process that as a result of locality constraints was already fundamentally multi-disciplinary, albeit not evidence-based. Therefore, while the notion of individual disciplines working together in a multi-disciplinary environment to achieve best outcomes was promoted as an underlying tenet of effective practice at BHC, it was also an inevitable aspect of a rural environment where 'working together as a team and to support individual disciplines and their own professional development' (m9) was an important aspect of practitioner survival.

Paradoxically, while the size and rurality of the BHC organisation played a primary role in compelling the adoption of the multi-disciplinary ways of working that have evolved into the clinical pathways program, the elements of size and rurality were also identified as central to the clinical pathways success as a multi-disciplinary practice initiative.

Staff at BHC maintained that its size enhanced its capacity to respond successfully to a multi-disciplinary approach to practice that, as a result of the clinical pathways program, was also evidence-based.

> To work together as a team and to support individual disciplines and their own professional development that the size of the organisation it's probably quite conducive to that. Um, multi-disciplinary teams can be difficult if large organisations are very departmental based rather than teams providing care to certain population groups. So in many ways, because it's one person across a whole range of conditions and needs, it's probably a good size for that [multi-disciplinary practice] (m9).

Conceding that location played a role in compelling disciplines to work together at both the practice and professional development/support level, the introduction of formalised clinical pathways still had a measurable impact on the nature of inter-disciplinary practice at this health site. Interview feedback consistently acknowledged pathways as the organisational mechanism that shifted the status quo from that of a team of diverse disciplines working together, with variable levels of success, to that of a group of people achieving, in treatment areas with pathways, a distinctively multi-disciplinary approach to practice. At BHC, pathways were clearly a driver for inter-disciplinary approaches. Eight interview participants contended that, in a number of discrete areas, clinical pathways shifted the practice environment at BHC from 'many disciplinary' to 'multi-disciplinary'.

> It is very important to us all to work as a team…if you can know what everyone else is doing then you can coordinate what you are doing. It fits together better for the patient… pathways actually helped people to see themselves as a multi-disciplinary team and to understand the scope of the other disciplines and to legitimise the role of each discipline in service delivery. Pathways formalised it …There was a gap and the evidence-based process filled it (o9).

In essence, the degree to which the development of clinical pathways was dependent on input from each of the disciplines involved in treatment provision added a new dimension to service development. It allowed diverse disciplines to negotiate, in an equal relationship, the development of treatment methods based on team discussion and on evidence.

> The pathway teams…the first time I've actually seen that true multi-disciplinary notion and we certainly did work with the same set of information. It would be distributed, we'd all read it, we'd then come back and discuss it as a group and there's clinical pathways were hinged on those discussions (a8).

Data analysis has shown that clinical pathways closely aligned the operational practice of the BHC site, in discrete treatment areas, to a notion of multi-disciplinary practice. This approach allows practitioners to retain high levels of practice autonomy while they gather information using the treatment framework provided by their discipline to work together on the health needs of individuals. This technique is closely aligned with the definition of multi-disciplinary practice used to inform this study (Garner & Orelove, 1994; Gill & Ling, 1995) and, as such, represents an example of a structured development and implementation of multi-disciplinary EBP.

Before moving on to explore the ways clinical pathways promoted practice equalisation at BHC by establishing a multi-disciplinary approach to EBP, it is important to reflect briefly on the notion of discipline differences and the extent to which, despite the pathways, discipline boundaries are maintained both within and outside the pathways program.

Discipline differences and multi-disciplinary practice

While a majority (n=8) of interview participants presented clinical pathways as exemplars of multi-disciplinary practice, a minority (n=2) identified the difficulties inherent in developing a system that must accommodate variations in the ways disciplines make sense of the world.

> The different disciplines have different ways of recording data …and we're actually trying to get multiple disciplines who have very different approaches to handling data to conform to a protocol and we see the examples of where it doesn't work. The protocols that we're using here, the doctors like to write a free hand or, in my case, problem based lists of problems, whereas the nursing staff will use a large number of tick boxes, which we find constraining …it translates into difficulties in applying them (n9).

Additionally, the issue of differences in practice philosophies in relation to applying an evidence-based approach was also raised by over half (n=6) of the interview participants.

Pathways team participants signalled the difficulties that can emerge in attempting to consolidate a pathway based on evidence when there are fundamental differences between the views of scientific disciplines (such as physiotherapy) and non-scientific disciplines (such as social work) as to what represents best practice. These differences are strengthened by the variations in the type and levels of evidence available to inform and validate choices around what should be included on a pathway.

> Some disciplines it's very hard to quantify in terms of evidence-based practice and I think it's very hard to quantify for some disciplines like social work…other disciplines, like

> physiotherapists, they can measure, endurance and angles of reflexion, extension or things like that…that tends to be the trend. I think it's easier to adopt evidence-based if you can quantify what you do (and these differences can be difficult to resolve) (u9).

The extent to which differences in evidence types are a causal or consequential factor in the maintenance of discipline boundaries is difficult to measure; however, the findings from the quantitative data for BHC offer some insight into the scope of discipline differences. Most participants (n=9) believed pathways provide a means to develop a greater understanding of cross-disciplinary work, as reflected in the following interview statement:

> It's really important to bring it together, because so much of the work that you do is shared work; what the allied health team are doing very much impacts on the nursing perspective…it's not really much point, looking at your area and then not being interested in what is the best quality medical care because all of that's so important…multi-disciplinary evidence-based practice is actually about having a shared understanding of what each discipline needs to do (p9).

> We bring the little specified bits and pieces together and say 'Well that's great but we need to deal with that at their house and their house has got this or their lifestyle's got this' and brings it all in so all the little bits of evidence-based practice that have carried on have been put together …in the rural area you would gain a lot more comfortable and better understanding of your fellow Allied Health disciplines because you do work in a multi-d environment…you've got the support of your other disciplines to say 'I've seen [speaker] doing this and I know why she's doing it' and I agree there is problems in such and such from what I've seen her doing (q9).

However, data from practitioners outside the stroke pathways team portrayed a very low level of understanding of the other disciplines' evidence bases. Questionnaire data found that collegiate input from other health disciplines was among the techniques ranked by participants as least commonly used to inform clinical practice. As depicted in Figure 13 on 'Low Frequency Usage' data, BHC practitioners ranked 'input by colleagues from other discipline areas' as informing practice significantly less than 20% of the time. This finding is at variance with the perceptions of participants from a discrete and strongly multi-disciplinary team such as stroke pathways. The questionnaire also tested how much BHC practitioners knew about the availability of evidence from other health discipline areas. Results indicate, as outlined in Table 33, that all health disciplines at BHC had limited understanding of the evidence bases of other discipline areas, with 92% (n=75) of participants rating between 'low' to 'medium', and 88% (n=66) rating as low.

Table 35: Knowledge of evidence relevant to other health disciplines (BHC)

HEALTH DISCIPLINE		Low		Medium		High	
	Total n	**%**	**n**	**%**	**n**	**%**	**n**
Medicine	19	63	12	37	7		
Nursing	49	67	33	18.5	9	14.5	7
Social Work	2	100	2				
Physiotherapy	5	60	3	20	1	20	1
Occupational Therapy	2	50	1	50	1		
Dietetics	1	100	1				
Speech Pathology	4	50	2	50	2		
Podiatry	1	100	1				
Total numbers/overall Percentages	**83**	**66**	**55**	**24**	**20**	**10**	**8**

These findings are at variance with the bulk of interview data, which promotes pathways as a means to consolidate and enhance insights on inter disciplinary practice—a view captured by the following statements:

> They're a great tool for [this discipline] to gauge and understand without having to run backwards and forwards to other disciplines to ask where they're about, what they're at with the client. It's there in front of us, it's obvious what needs to be done…It is relevant to [this discipline], working as a team because we need to know also where their standards are and how they're getting their information can sometimes help us understand (t9).

In reality, the quantitative data, which is representative of the largest percentage of the BHC practitioner population, reveals limitations in the knowledge, understanding, and accessing of evidence bases of other disciplines. This result supplements and enhances the findings on overall practitioner knowledge of EBP at BHC by considering EBP knowledge and understanding from the multi-disciplinary perspective.

Closely linked to this theme is the question of how confident disciplines can be in the validity of practice decisions of colleagues from other discipline areas if they have no insight into the evidence used by those same colleagues to inform practice. Interview data sought to clarify the degree of correlation between evidence, pathways, and perceptions of practice validity at BHC.

6.4.2 Practice Validation, Pathways and EBP

Within the context of the clinical pathways program at BHC, the notion of 'practice validation' was found to encompass two distinct, yet closely inter-related, concepts:

1. Practice validity as measured through notable changes in perceptions across disciplines of the value of one treatment approach over another, regardless of discipline of origin. The extent to which this occurred was revealed in an increased tendency to adopt treatment regimes already proven to be valid and evidence-based within individual discipline areas but not previously accepted in multi-disciplinary practice situations as the most valid approach.

2. Practice validation as indicated by increased levels of cross-disciplinary respect and acceptance. This was inferred through increased adoption and expansion of the clinical pathways program, which is dependent on diverse disciplines negotiating how they want the pathway to look (based on discipline-specific knowledge and evidence) to achieve best outcomes overall.

Interview feedback found practice validation occurred through both these means. Responses in the semi-structured interviews promoted pathways as a mechanism to improve inter-disciplinary perceptions of the practice approaches of different disciplines within the multi-disciplinary team. Eight interview participants specifically noted that a major benefit of introducing an evidence-based process to a multi-disciplinary practice context was that it provided a formal mechanism through which to say 'this practice is endorsed as valid and should be promoted by all participants in treatment delivery'. The essence of the way pathways helped validate existing practice is summarised in the following statement from a pathways team member, as they discuss the adoption of swallow assessments within the stoke pathway:

> And that's probably been the biggest outcome for speech pathology; for many years, it's been consistently stated, a consistent message, but it hasn't been met and hasn't been followed through - I don't think it's been recognised uniformly as an issue. Whereas now, within the structure of the stroke pathways, it's just an automatic, and it's really lovely to see that in the files and I don't think it's necessarily been more effort or a different approach from the speech pathologist, it's the fact now that actually it has been put into this structure. I think that our message has become a lot easier once it was developed, once it became part of the team…up till now (it has been), lots of individual disciplines coming in using their own research and own background, but some things like the clinical pathways actually incorporated that 4 indicators are quite important in stroke management… whereas before, it was us, as an individual discipline, saying; 'look, you have to assess swallowing'. Suddenly it was lead by the team and this was a primary issue, that the evidence shows that a swallow had to be assessed within, and managed within 24 hours. So that I think actually when someone came in and put a structure, like a clinical pathway, helped us do more of that as a team (s9).

Participants identified a parallel and associated process of practice validation as having grown from the need to negotiate therapies across disciplines as a prerequisite to pathways development. Taking a multi-disciplinary approach to the development of treatment regimes required practitioners to expand their worldview beyond their own discipline and to negotiate more inclusive pathways to service delivery. Consequent to this was an increase in levels of cross-disciplinary respect and acceptance, as explained in the following statement, which is representative of a viewpoint expressed, in various forms, by nine interviewees:

> So each of us went off, decided what needed to be done in our own discipline then brought it back to the group and worked out how whatever we wanted worked in with all the other people. So for example, I was in the pneumonia pathway so I went off and decided what I wanted in my little box, what needed to be done for [my discipline] but then came back and talked to the physician who wanted sporantary done as well so we worked together so good multi-disciplinary practice is dependent on the existence of a guideline…the pathways enabled us to time when OT is going to go and access them and the OT therefore knows what the physio does and they know what the nurses are doing with them (r9).

Although data such as this provides valuable insights into the views of the members of an established and successful pathways team, it is important to note that the extent to which the pathways facilitated a wider acceptance of diverse professional practice approaches was not tested through the quantitative data collection process. This has meant that the question of whether changes in perceptions around practice validity were dependent on practitioner involvement in either developing or applying a clinical pathway was not able to be resolved. The lack of triangulation across the two data collection methods means there is no measure of whether the pathways, and the evidence that underpins them, have had a flow-on effect across BHC in altering existing perceptions of the professional validity of diverse practice approaches within the multi-disciplinary context. This is a limitation of data collection because insights into the scope of change at the organisational level would have been extremely beneficial. While not specific to practice validity, written questionnaire feedback from the general participant pool signals a degree of professional distrust between disciplines; for example, ‘I seek and need to use evidence to cross-check information because not all advice can be trusted [medical practitioner]; and ‘It helps me to prove to medicine that I know what I am talking about [allied health practitioner]’. Although the non-classifying nature of the questionnaires means it is not possible to identify if these comments were made by practitioners involved in the formal pathways program, statements such as these do suggest the existence of inter-disciplinary discord relating to perceptions of practice validity, with

EBP providing a means to support decision-making on treatment. The use of evidence in this way is different to the type of practice validation that appears to have developed as part of pathways. Using evidence to validate a practice decision or to check up on the work of a colleague suggests a continued struggle to prove professional competency. Conversely, the pathways appear to be promoting and implementing a process structured to create a systematic and systemic change in perceptions around the validity of particular approaches to practice in the multi-disciplinary context.

Acknowledging the role of the pathways in providing a mechanism likely to enhance how the practice of individual discipline areas is perceived at the multi-disciplinary and organisational levels, interview data relating to motivators for the adoption of evidence-based clinical pathways highlights some potential contra-indicators to practice validation. A recurrent theme in the qualitative data is the reference to the role of pathways in maintaining a watching brief on practitioner practice. Six interview participants referred to the way the pathways made sure everyone did what they had to do and provided a framework ensuring any omission by practitioners was notable by its absence. These assessments, while presented as a positive aspect of the pathways program, establish an inter-relationship between the notion of practice validation and that of practice control. This raises the question of the extent to which the capacity to control practice, in itself, shapes the validation process; if actions can be monitored then treatment becomes more transparent and, inevitably, more controlled. While this may be an effective strategy, it has the potential to undermine the process of professional validation. It means that the validity of a particular approach may have been conceded because of the ability to control practice rather than because of an increased acceptance—marked by a surrendering of control—of divergent practice approaches within the multi-disciplinary team. The following statement outlines an example of the interrelationship between transparency and validity:

> Everyone felt that because they were part of it; that we had to try and get our bits done when it was important. It's more evident in the pathways if you're not pulling up your socks and doing your bit because you're signature and your tick aren't there, whereas in a progress note type setting, unless the nurse or whoever was looking after the person was actually aware you were meant to see them on day 3 and you haven't written they didn't know, whereas people can jump on you a lot quicker, so I think that realisation that 'hell, we don't want to give our department a bad name, we've got to do this by day 3', also kicks in there (z8).

However, even though practice under the pathways may be evidence-based, clinical behaviours continue to be driven by structural requirements (and the consequences of not meeting these

requirements) rather than by the skill enhancement and professional development that is often promoted as an important aspect of achieving best practice through the adoption of EBP.

Conceding shortfalls in the scope of the data, and having identified the potential of the program to undermine practice validation, there is no question that the primary message from analysis of qualitative data is an endorsement of EBP, as applied within the clinical pathways, as a means to enhance the perceived validity of diverse discipline approaches at the multi-disciplinary level. In the following assessment of how perceptions have changed over time, an allied health staff member summarises the extent to which multi-disciplinary evidence-based practice has played a key role in professional practice validation:

> I first came here it was 'this is how you do things; it's always been done this way! Here's the forms da da da' and I was kind of 'hang on a minute, I've learnt to do it this way, based on evidence'. As a younger therapist you have a bit of evidence-based stuff there rather than that old thing that's been here forever… So I feel, as a department, evidence-based practice (through the pathways) has really uplifted what [this discipline] is …it's sped up from us being considered to be little more than the basket weavers years ago to now when we are actually involved in the neuro rehab treatment decisions (r10).

The point captured in this statement, while illustrative of practice validation, also reflects a recurrent theme in the data around the dominant role of medicine at BHC, across a number of key domains. Qualitative data—and, to a limited degree, written questionnaire feedback such as 'It helps me to prove to medicine that I know what I am talking about [allied health practitioner]'—isolates the fact that, at BHC, medicine was the dominant discipline in:

- driving the treatment approaches adopted at the service;
- shaping the process of the validation of practice for disciplines other than medicine; and
- determining the status and sphere of control of individual disciplines within the multi-disciplinary team.

The following subsection considers the impact of this situation in regard to the pathways and the evidence-based movement, with particular emphasis on the ways medical dominance has enhanced or limited the EBP uptake in the multi-disciplinary environment.

6.4.3 Medical Dominance, Pathways, and EBP

Medicine driving treatment

Data from ten participants involved in the interview process identified medicine as having the greatest singular impact on the uptake of an evidence-based multi-disciplinary approach to practice. There was general consensus that the pathways provided a means to modify traditional roles, with medicine as the ultimate decision-maker in treatment provision. However, the maintenance of conventional medical dominance in decision-making (Gair & Hartley, 2001; Willis, 1990) is captured utterly in the following extract of interview:

> The medical person's at the top of the hierarchy, and then the nursing staff and the allied health staff, and it is very difficult to overcome that…the allied health staff …they've got expertise in particular areas, and it's a matter of harnessing that expertise and bringing it back into the whole management of the patient. There would be a number of medical practitioners who wouldn't have that view… they have the overall responsibility for the patient, they have the expertise, and they'll order exactly what they want, when they want it, and how they want it. But clearly, the evidence … (shows) that the multi-disciplinary approach does have the better outcome. But getting those people to the table, and having the allied health people feeling that they've got an equal voice about their particular area, be it swallowing for the speech therapist, or physiotherapy for the patient that's got a chest problem…There needs to be an acceptance by everyone around the table that they've got particular levels of expertise, and that's sometimes hard to do…A large proportion of doctors are still quite protective, and believe, I think, that they should be able to provide everything that is required, and they'll decide what's needed, not a team of allied health staff, which is a great pity really, because their patient misses out because of that (z9).

During interview, specific examples were given of evidence-based approaches within the pathways having been modified to meet the requirements of the medical staff. These modifications related to what medical staff perceived to be the more appropriate treatment approach, regardless of the available evidence. Although these instances were not commonplace, they did occur, as explained in the following statement[2]:

[2] It is important to point out that the interview participant for this extract of interview moved between references to 'medicine' and 'personalities' as being the most critical issue in determining practitioner behavior and a subsequent uptake of multi-disciplinary EBP. Acknowledging this vacillation, the extract has been included as being a specific reference to medicine as it is representative of the general view, supported by the majority of 91% of participants, that treatment decisions regarding pathways are driven by medicine.

> Certainly medical staff expect to take a lead role in certain areas, and weren't as willing to, take that interest in the other disciplines. So don't really care about um, what speech pathologists did and things like that. And having said that, it's generally medicine that was fine… we did have some difficulties at times where the evidence would suggest one thing and the personality would say 'No, I'm not doing that, that's ridiculous', but with no real evidence for it, but for negating it. Ah, and sometimes we haven't used what perhaps I would think was best practice or the best evidence because of that. Sometimes we couldn't get around it and just had to accept it (s10).

This feedback highlights the importance in environments such as those represented by the BHC site of negotiating with medicine if multi-disciplinary EBP is to be adopted successfully. It also signals the inhibitors that may be in place, regardless of negotiation, to a universal and uniform application of evidence.

Medical dominance, practice validation, and practitioners\ sphere of influence

A previous section of this chapter examined the key role of pathways in validating practice. In an extension of this, a consideration of the interview data specific to the theme of medical dominance clarifies the strong link between practice validation and the perceptions of medicine. Based on BHC interview data, medicine was the discipline with the power to endorse practice and to control any subsequent validation of non-medical treatment approaches. The ability to use evidence to prove practice validity did influence medicine views on treatment; however, the emphasis remained on changing the perceptions of medicine above all other disciplines.

The following statements are representative of the view that the pathways provided a means to validate practice to medical practitioners:

> I think it gives us a better standing with the GPs and we've got more credibility I guess by doing things in the way that we're doing it now. Um, being fairly new out I haven't had a lot to do with not using much evidence-based stuff I guess so I can't comment on, on that as much, but through the evidence-based practice and developing things like our pathways to different areas that we work with has certainly made a big difference in us being able to say to the GPs 'Look they don't need to stay in for another 3 days, we can actually get them home with this equipment and do this now and their outcomes will be better' and you've got a bit more bargaining and a bit more, yeah. them (x9).

> Coming from a [discipline area] point of view or, or the other allied health areas because often if we're not written down and if we're not specified then we've found that we can be missed as

> priorities whereas at least now we're all written down and we don't get missed, we get our say and it's not just the doctors…quite often will make their decisions and not care to refer to us regardless of whether or not the patient can actually walk home so I think it's made it better yes (b10).

A final point concerning medical dominance and multi-disciplinary EBP relates to the extent pathways have been used to expand the status and sphere of control of individual disciplines within the multi-disciplinary team. In a duplication of previous data, practitioners' capacity to expand these elements of their practice remained closely linked to the extent they could modify perceptions of medical staff. This emphasises the extent of medical power across the study site but also indicates the power of the pathways in facilitating the change process:

> It was really pleasing when we did the pathway, we got to work with the physician here, so he actually became someone who was very vocal in saying the swallow assessment is one of the four indicators, things like that…So he became an advocate and then we got to present it to the BMO (medical) group… I think that makes it work. (It couldn't work without medical support) because that's where we're getting our referrals from, that's where they're waiting for our assessments, our recommendations whereas before they may have proceeded in those areas themselves. They're actually ensuring that they use the management tool (a10).

This statement highlights the extent to which success of the pathways program is dependent on acceptance and endorsement by medicine. This need for endorsement was particularly critical in instances where the instigators for change came from disciplines other than medicine:

> Because the interest in the stroke pathway came from allied health team there is a strong commitment to the pathway…we were also aware that we needed to get strong medical involvement as it is traditional that they haven't worked as part of a team. That's a particularly important area to get into as the treatment has to be ordered by them and to have them involved then we could strengthen the involvement of all disciplines so it was important to have the medical staff involved in the team (c10).

While resistance to change was an influencing factor in the implementation of the pathways and the adoption of EBP across the BHC site, it would be misleading to suggest that such resistance was confined to medicine. Indicators of resistance were found, in both quantitative and qualitative data, across other discipline areas.

6.4.4 Change resisters, Pathways, and EBP

While the questionnaire did not examine resistance to pathways specifically, data was gathered on resistance to the use of evidence in practice. Levels of resistance to the use of EBP were measured through the assessment of practitioner attitude to EBP. While most BHC practitioners were positive about EBP, 20.5% (n=17) resisted the use of evidence in practice. Interestingly, 16 of the 17 practitioners came from the disciplines of medicine and nursing (the remaining practitioner came from occupational therapy). These results were supported by written feedback within the questionnaires. Statements such as 'I don't have the time or energy for this', 'Evidence-based practice is not relevant in environments such as this where we face isolation and so few resources', and 'EBP is too pie in the sky for real life practice' were assessed as being indicative of resistance to the evidence-based approach. In all cases of written feedback, responses indicating some level of resistance to EBP across the BHC site were made by nursing or medical staff.

The interview data (which focused on both EBP as a general concept and evidence within the clinical pathways program) duplicates these findings. All interview participants identified that resistance, when it occurred, was limited to the disciplines of nursing and medicine. The following are representative of resistance to the pathways from both nursing and medical staff:

> In other areas it was more difficult but there was strong clinical evidence in the stroke area. Within the stroke team it was easy. The team was committed so that wasn't hard. What was more difficult was the process of rolling it out to everyone else. That was difficult and getting confused, for instance, in emergency [staff member identified] was enthusiastic but the rest of the staff was not. And certainly I think the medical staff need to be convinced whereas the allied health team, because they are smaller, they can reach each other (d10).

> There are going to be personalities out there that no matter what you put to them, how much proof you've got, they are still set in their ways of doing things, are very rigid and don't want to look outside their square to take on board new things. I think that was the most difficult thing - taking them outside the square to try to get them to look at it (h11).

Data analysis across all interview transcripts provides no examples of resistance to the change from the allied health area. This is expected given that allied health staff (in the minority across the BHC staffing profile) represent only 18% (n=15) of the questionnaire sample.

These data provide noteworthy insights into the use of EBP in the BHC service setting. In an environment where 87% of the practitioners come from either the nursing (63%, n=89) or medicine

(24%, n=34) disciplines, the influences of medical dominance and resistance to change on the use of EBP are pivotal.

6.4.5 Practice Equalisation: Summary and Discussion

In summary, clinical pathways at BHC have provided a structured mechanism through which to develop a multi-disciplinary approach to treatment provision. Through an organisationally driven and resourced initiative, a dedicated person was able to research discipline-specific evidence bases in consultation with representatives from each discipline area. A structured multi-disciplinary evidence framework was then developed to inform practice for particular treatment areas. In an environment with a paucity of structured multi-disciplinary evidence (Swinkels et al. 2002), this was a significant advance. The consensus across interview data was that the organisational size of BHC played a major role in the development of multi-disciplinary practice as rural practitioners know and depend on each other and work closely together across all aspects of service delivery.

In regard to practice equalisation, the following key benefits of developing evidence-based approaches to practice through the mechanism of the clinical pathway were identified:

- Practitioners working within the multi-disciplinary team were provided with the opportunity to develop a greater understanding of the evidence bases that drive the practice of other disciplines. It was acknowledged, however, that issues of professional socialisation made this process difficult.

- A formalised strategy for EBP, as an organisationally endorsed initiative, provided increased validation for a number of discipline areas. This finding reinforces and legitimates assessments made in previous studies around the benefits for practice validation provided by the evidence-based movement (Ciliska & Di Censo 1999; Clemens 1998; Hendriks et al. 2000; McCarthy & Hegney 1998; Turner 2001b; Yerxa 1993).

Despite these recognised benefits, the issue of medical dominance in health treatment decision-making (Warlow 1996; Gair & Hartery 2001) remains pivotal in shaping adoption of the pathways and, through these, EBP. In line with the findings of Greco and Eisenberg (1993) on the importance of involving medical staff to minimise opposition, medical staff were actively involved in developing the pathways. However, while this process was beneficial to overall adoption levels, it did not succeed in eliminating resistance. Resistance was also found among some nursing staff, and this was also linked to the positions of authority held by nursing staff vis-à-vis allied health

practitioners. Lipman (2000, p.560) identified the greatest barrier to EBP to be 'the perceived difficulty of internalising the process of evidence-based practice and long established traditions of deference to authority'. Interview feedback from BHC suggests that this remained an issue at this health service site.

6.5 CONSTRUCTS OF RURALITY

Much of the work presented to date in this chapter has explored the clinical pathways program in order to determine the rationale for—and consequences of—this programmatic approach to EBP. This exploration has been pivotal to making sense of EBP at this health service site because, for BHC, clinical pathways are *the* mechanism chosen to operationalise the organisational agenda to enhance service quality, reduce adverse events, better manage clinical risk, and introduce EBP. All interview participants, in their articulation of the level of support provided organisationally to develop and implement the program, highlighted the extent of this commitment:

> They do support … they've certainly allowed positions to have clinical pathway roles and provided venues and vehicles for that, and allowed development of that …clinical pathway coordinators…there's reception time to type forms and processes and collect information. There's IT input… so the processes are there. There are some limiting factors but this particular organisation probably does try to achieve those things within its limitations (b11).

Accepting this level of commitment, detailed consideration has been given to the antecedents that aided the successful development and implementation of the clinical pathways program and the evidence-based approach they represent. What has not been considered to this point is the role played by the rurality of BHC in determining any planning, development, and implementation decisions relating to the pathways, or any limitations created by the rurality that defines BHC.

This section, therefore, examines the data specific to BHC's rurality, and the way this rurality has influenced the site's uptake of EBP. This involves exploring the ways agency size and structure drive BHC's ability to adopt EBP and, linked to this, the ways the rural context established parameters that determined the practitioners' capacity to access and apply evidence in practice, and the applicability of available contemporary health sector evidence. This evidence is often developed and tailored to the specific needs of metropolitan settings, which lessens its compatibility to the needs of the BHC rural environment.

Accordingly, of the following specific themes are presented in this section:

- organisational size and structure shaping the BHC practice environment;
- service fragmentation;
- service isolation;
- rural and metropolitan differentials; and
- expert generalists

6.5.1 Organisational Size and Structure

Organisational size and structure share a close relationship because the organisational structures across the study site are determined by the organisation's size. As a result, notions of size and structure at BHC are often referred to interchangeably by the participants, making it difficult to compartmentalise discussion of these themes. Where possible, feedback on these themes has been separated, with an acknowledgment that participants often failed to separate them in discussion.

Organisational structure, EBP, and the role of middle management

The organisational structure for BHC, as detailed at the start of this chapter, incorporates an executive level and a middle management level with responsibility for service administration, planning, and delivery. There was consensus among interview participants that availability of middle management was critical to the implementation of EBP because it allowed for a group of practitioners as part of their clinical responsibility to be dedicated to facilitating and supporting EBP strategies.

> So the organisation does leave a certain amount of responsibility back with the row of middle management to drive …all of those things aiming to achieve best practice in rural health (b11).

Acknowledging the propensity to blur the distinction between size and structure, six interview participants made specific reference to the structure of the organisation as being central to the development and implementation of clinical pathways, believing that without this structure the ability to introduce EBP would have been jeopardised: 'The further you move outside the organisational structures into other communities that are smaller with less resources, that would become a more difficult process (h12)'.

Although some argument was advanced that the success of the pathways was linked closely to the personalities in middle management positions—including comments such as 'I'm not sure whether it's the structure or actually the people in the structure (j12)'—this view assumed the existence of a

middle management structure within which designated individuals could operate. Overall, the data overwhelmingly identifies organisational structure as a key element to successful implementation, with general agreement that the middle management structure was 'absolutely 100% critical, without their commitment it just wouldn't happen (x10)'.

Organisational size and clinical pathways

The majority of participants discussed organisational size as creating a practice environment that defined and was defined by the operational elements needed for successful implementation of the pathways program. The level of organisational resourcing, the capacity for effective communication, network linkages, and service cohesion were presented as a complex whole that allowed for the development of successful professional inter-relationships, and the attainment of a high level of multi-disciplinary cohesion.

Nine interview participants believed BHC's size was pivotal in the organisation's capacity to implement the pathways program successfully. Participants believed that BHC, with its small workforce structure, had an increased ability to negotiate change processes:

> Here (unlike a large hospital), there might be half a dozen key players that need to be involved in the discussion to get the whole ball rolling. We've got two surgeons. If we decide we're going to change surgical practice, we've got to convince two surgeons… If there were 50 of them across various units, that's going to be very very hard to…it would be very resource-intensive to change all of that (e12).

Conversely, two interviewees identified the organisation's size as limiting the capacity to implement EBP because of decreased access to facilities and specialisation within a smaller rural organisation. Interestingly, these participants were not focusing on the pathways program in this assessment, but were referring specifically to the impact of organisational size on practitioners' ability to seek and use evidence independently to inform practice.

> The smaller you are the smaller facilities you've got…We don't have access to a neurologist, we don't have access to a cardiologist, we don't have access to angiograms, we don't have access to a lot of disciplines so we're very limited to our knowledge base (on what is the best evidence to use for some conditions) (u11).

While these participants represent a minority of the interview sample of practitioners, their view is supported by the written feedback of 16% (n=13) of questionnaire participants who identified

BHC's size and rurality as limiting the EBP uptake. Again, these respondents were not focusing only on the pathways program in this assessment.

Resourcing and communication

The ability to resource programs coupled with the capacity to communicate the change process effectively were also seen as pivotal to success. Importantly, as practitioners employed by a rural organisation and with extensive experience in rural practice[3], the clear distinction was made that, for effective evidence-based approaches to be put in place in a rural location, organisations needed to be of a 'reasonable' size. While no specific definition of 'reasonable' was provided, BHC was considered to be at the optimum size. Nine of the 11 interview participants argued that an organisation any smaller than BHC could not implement an evidence-based approach when faced with the constraints imposed by rurality.

Conversely, the same group of participants argued that the introduction of EBP in large city organisations is constrained by the size of the workforce. Whether this cohort—given the workforce experience of participants—has the contextual, work-based knowledge to make such an assessment needs to be considered; however, the strongest arguments linking size and EBP were generally put forward by the practitioners with experience in metropolitan locations and/or smaller rural environments.

A majority (nine) of interview participants made the link to size when discussing the importance of resourcing and communications for the successful development and implementation of EBP. The following interview extracts provide examples of these perspectives:

> This size hospital is really fabulous because we're big enough to have the resources we need but we're small enough that we all know each other (x10).

> Smaller hospitals don't have that (support mechanisms and adequate staffing) so therefore you only have one or two or three people that are going to do everything… I would suggest to you that bigger places have a better or a bigger network of people to pull together to bring the evidence in… I would suggest that maybe here it is better than in the bigger ones; they are too big and then you actually don't get everyone together talking – we've actually got good

[3] Questionnaire data indicates that 70% (n=58) of practitioners at BCH had been practising for more than ten years. While no quantitative data is available around what proportion of this time was spent in rural practice, six interview participants had worked in rural practice for their entire working life, three had worked in rural practice for twenty years, one had worked in rural practice for ten years and one had worked in rural practice for over three years. Interview participants indicated that this profile was representative of the overall workforce structure at BHC.

> communication in this hospital. So I think if you don't have some of those things in place then you are not going to be able to look at evidence-based practice (h12).

Closely linked to effective communication is the level of cohesion in professional inter-relationships that study participants believed were able to develop due to BHC's size. Despite the identified existence of change resisters across the nursing and medicine disciplines, all interview participants argued that the size of BHC allowed for a level of team cohesion unique to the BHC environment and critical to the success of the pathways program.

Professional relationships, cohesion, and anonymity

This theme illustrates the complex and circular nature of the relationship between organisational size and uptake of EBP. Size and location allow for the development of strong professional relationships identified as intrinsic to working within a small, rurally based organisation. The nature of these professional relationships promotes a uniformity of purpose that underpins effective teamwork and complements the attainment of successful multi-disciplinary approaches to practice. This cohesion has been harnessed in the development of the multi-disciplinary clinical pathways, as discussed previously. All interview participants made this link between the pathways, organisational size, and cohesion in multi-disciplinary practice.

> I can't emphasise how important I think that is (size, resourcing and knowing each other) and that we all have a common goal and I think that we all get on well and we work as a team and I think that that is what promotes evidence-based practice here (x10).

> I know [identified disciplines] really well – we all work really closely together so it was really easy to get feedback about problems in certain areas and I think the size of this place, had a lot to do with the success of the project because it's small enough to do it and big enough to support a project such as this one (l11).

This effect of organisational size was developed further to link multi-disciplinary team cohesion with the need to work toward quality outcomes in service delivery. Echoing previous data, health service size was identified as an important element in monitoring service delivery and promoting the introduction of best practice; therefore, the consequences of getting it wrong in a rural environment cannot be masked. The following extract captures the way the diverse elements of resourcing, teamwork, evidence, and rurality are intertwined inextricably with organisational size:

> The patients aren't anonymous, the staff aren't anonymous…I say to the junior medical staff when they come here, 'Look, you really need to get on with staff here, they're going to be the

> same staff that are there tomorrow, the next day, and for every day of your rotation'…I think there's a team cohesion because of size and the rural side of it as well, because there aren't 3 hospitals down the road and we can't say to someone, 'Well, get lost, we're sick of the sight of you, you are being a nuisance.' If we treat people a particular way because there aren't other hospitals and there aren't other places for them to go without travelling large distances, if we don't treat them optimally then they're going to bounce back on us, so our re-admission rate does reflect to some degree our quality of care because there's no convenient alternative (d12).

A final point on organisational size and structure: while the interview and questionnaire data collection process at BHC focused on one site, BHC is actually an amalgamated service site based across two separate geographical locations. The larger site (site A) has been the focus of this study. BHC (site B) is smaller and is located approximately 40 kilometres from site A. As part of examining the link between organisational size/structure and adoption of multi-disciplinary EBP, the impact having two sites has on the implementation of a uniform, organisation-wide, approach to EBP was explored through the interview process.

6.5.2 Service Fragmentation

Only one interview participant argued that the existing approach to the uptake of evidence through the pathways had resulted in an organisation-wide uptake of EBP. This viewpoint was qualified with an acknowledgment that any cross-site success resulted from the commitment of individual practitioners rather than organisational imperatives.

> When we say we've developed a particular pathway for management here, the first thing he (the medical practitioner at the second site) wants is a copy of it, so he can use it up there. So, yes, theoretically, there should be the opportunity for fragmentation and different practices, but again, coming down to personalities, in practice that doesn't happen at the moment. This chap may retire in a few years, and we'll have someone different there, and it might be a completely different story (g12).

While this situation was identified as partly due to the different service delivery focus of the two sites, organisational and cultural diversity was also identified as inhibiting the introduction of a uniform approach to EBP across a fragmented service system. The major reasons for divergent approaches were linked to notions of ownership and the need for localisation and customisation of EBP at each site.

Customised guidelines, fragmentation and parochialism

Seven of the 11 interview participants believed that the geographical location of the second site and the need for guidelines to be customised to meet specific local need inhibited the implementation of the pathways program across service delivery sites.

> We hoped that these pathways would be used in [second location] as well. They were interested in them, but to get people to come and be involved, it was just too hard from half an hour away. We did put people in the team from [second location] but it hasn't really happened… it's like I said, even though it's local, it's a whole different area and almost needs to be re-adjusted for them (m11).

The strong argument (reported previously) that guidelines need to be localised and customised if they are to be adopted, was strongly reiterated in discussions around EBP and service fragmentation. However, the absence of specific feedback from site B practitioners means there is no data to support or disprove the site A participants' assessments. This is a study shortfall.

The fact that the second site became part of BHC from service amalgamation was also identified as an inhibitor in the promotion of uniform, organisation-wide approaches to EBP. The extent and impact of this disengagement is captured effectively in the following interview statements:

> I think it's because they were amalgamated after we were both stand alone institutions and [name of service] is very much smaller than us and they were very, very much their own entity and there were certain things that just weren't negotiable as far as making uniform. I guess the type of patients they have, probably impacts as well…it is just so different, it's frightening (y10).

> Yes, people can be pretty parochial – they're fiercely parochial and very protective of their patch, and view the large hospital as the predator, and there are things that we wanted to introduce clinically that, had we said these particular things, it would have been viewed as [BHC] trying to grab a chunk of clinical activity, or whatever (c12).

This geographical and functional service fragmentation resulted in a corresponding fragmentation of the multi-disciplinary EBP approaches achieved through the BHC clinical pathways program. This occurred for two reasons. Firstly, given the identified link between multi-disciplinary practice and the clinical pathways program, the non-adoption of the pathways in itself was likely to decrease the use of multi-disciplinary EBP. Secondly, the size, location, and service needs of site B meant that the clinical support provided by site A tended to be by individual disciplines rather than teams.

Given the previously identified tendency for evidence-based approaches outside the pathways to be driven by practitioner worldview—which may or may not promote an evidence-based approach—rather than organisational imperatives, the use of individual practitioners has the capacity to dilute the use of evidence. This dissolution of a structured approach to evidence and its impact on multi-disciplinary practice was identified by nine of the 11 practitioners, as articulated in the following statement:

> I think because when we deliver service to people as part of the bigger service, we deliver service as an individual discipline. Um, we don't present Allied Health team or we don't have the health team, the combined meetings and things like that, so I think um, all of a sudden the multi-disciplinary focus is fragmented (x11).

The issues identified around service fragmentation and the geographical and organisational isolation of parts of BHC highlights the need to examine the impact of service isolation on BHC's capacity to adopt evidence in practice.

6.5.3 Service Isolation

Service isolation, while identified as inhibiting uptake of EBP, was not understood to mean that a rural health service could not successfully apply a philosophy of using evidence in practice. There was general consensus among interview participants that professional networks and networking capacity in a service the size of BHC are such that evidence-based knowledge is readily shared, while access to internet, organisational size, and resourcing helps overcome many of the potential problems linked to service isolation.

> People, and me included, have got contacts all over the place, and there is a lot of sharing of information. So, we're isolated geographically, but we've always got, especially on the medical staff, have got people coming through the place, we've got medical students here, we've got nursing students, we've got allied health students, people are continually saying, 'hey, this is what we've been taught, this is what we've seen elsewhere' (f12).

> The internet has made a huge difference, as has the clinical health channel. Things like that, in the last year or two really changed dramatically…we probably can find out as much information as perhaps the Austin would from St Vincent's - in terms of geography I'm sure they don't travel to each others hospitals, in a way, in terms of the actual evidence, what we can find out it is the same. There are some things in terms of actual practice that we can't access (j11).

It is in regard to ‘the actual practice that we can’t access’, that service isolation was found to impact on the use of EBP. Interview feedback from a majority (n=8) of practitioners identified that service isolation limited the type of treatment options available to patients, regardless of degree of knowledge of best evidence. Contemporary evidence-based frameworks might recommend the application of particular treatment approaches; however; factors such as time, distance, resourcing; and lack of expertise inhibited the capacity of BHC practitioners to pursue those approaches effectively. BHC sought to accommodate this acknowledged reality through the development of customised evidence-based approaches such as the pathways.

Other constraints specific to service isolation that had not been addressed as effectively by BHC management related to access to specialists and professional development—both of which were seen as pivotal to effective adoption of EBP.

Specialisation, access, professional development and isolation

The statement ‘I wouldn't know, or access, any less than any of my colleagues in Adelaide (s11)’ reflects the view of all BHC interview participants that internet access, online evidence-based resources, the BCH library service, and telephone/email links represented mechanisms for EBP knowledge equalisation between metropolitan and rural practice. Despite this, eight out of 11 interview participants identified that effective adoption of EBP depended on more than access to databases and collegiate networking. The ability to access clinical specialisation support and discipline-based professional development options are important aspects of promotion and uptake of EBP—aspects that were minimised at BHC as a direct result of service isolation. The impact of a lack of access to clinical specialisation on using EBP is captured effectively in the following:

> It's really important to seek the knowledge and the experience of other people. If you worked in a large metropolitan hospital you'd have department head but then you'd have say head of cardiary respiratory, head of neurology, head of orthopedics, whatever and so therefore you've always got someone to go to. Here we have 2 senior clinicians that are both specialising in orthopedics… there isn't that tiered system within the department itself …you are isolated. You still have access to all the internet and stuff like that but, but not access to perhaps someone's clinical experience (which is an important part of EBP) (t11).

Further, while BHC management consistently articulated a philosophy of promoting opportunities for professional development (as evidenced by interview feedback and agency documentation), the impact of service isolation on professional development remains notable. Eight interviewees argued that the time and distance constraints of rural practice complicated access to professional

development opportunities, and internet access, while valuable, provided a vast array of resource options that, to be effective, needed supplementing by peer review, clinical expertise, and the opportunity to hone skills through professional development.

> The things that may inhibit us accessing options and research…the distance, the ability to get to more seminars…It's a fair distance to get anywhere in particular from here…if you look at the internet you may find 20 different articles, however which one is most suitable? You don't have time to sit there and read 20 articles. You know our time-line is very, is very tight. And we can't be masters at every single point. Just the time factor would also influence what evidence and what research that we'll actually access… there is not the time to actually get on and read your journals or do your research and, at times that becomes quite hard (w11).

The impacts of time and distance constraints were not limited to BHC staff. A small number of interview participants (n=3) identified that rural isolation also limited the options available to service users. This, in turn, affected the applicability and uptake of EBP in the BHC service environment. BHC operates in a rural community undergoing significant financial and environmental difficulties. This determines what can be offered and what the community is willing to allocate time and energy to—and, consequently, shapes the scope of service delivery options at the BHC service site.

> A lot of our isolation in terms of accessing things is just travel time, or it's people in the community won't access things, (so it depends on) their time and commitment. Um, I think there's also a certain amount of isolation at the moment that is just financial and a reflection of the drought conditions and restricted water (d11).

The belief that isolation impacted on practitioner ability to use evidence was also supported in questionnaire feedback—56% of BHC questionnaire participants who provided a written response specifically identified service isolation as an inhibitor in the adoption of EBP. This is evidenced by written comments such as 'Time and facilities for evidence-based approaches are often not available in isolated rural locations (and therefore the approach is not used)'.

A limitation in regard to understanding the impact of service isolation on EBP is the fact that interview participants focused the majority of their feedback on the pathways project in which they had been involved. This focus meant that service isolation was considered primarily from the perspective of implementation and treatment involving the pathways. Limited feedback was given around the impact of service isolation on the uptake of EBP outside this program area.

The issue of rural isolation highlights the differentials between rural and metropolitan practice; how this influenced EBP uptake at the BHC service site needs to be explored in greater detail.

6.5.4 Rural and Metropolitan Differentials

All interview participants discussed how the differences between rural and metropolitan practice affected the applicability and adoption of evidence-based approaches. Feedback reinforced many of the previous findings relating to the limited capacity of rural practitioners to transfer evidence developed for, and by, metropolitan locations directly to the rural environment: 'What works in the city doesn't always work here because there are a whole lot of different factors—we actually sometimes don't have the support mechanisms that other places do' (f11). These data were also supported by written feedback in questionnaires around the reasons why EBP is not adopted by practitioners, with 20% of those who provided a written response identifying this as problematic.

Ten of the 11 interview participants discussed the importance of 'evidence relevance' in ensuring the successful adoption of EBP. The type of strategies developed to counter the incompatibility caused by rural/metropolitan differences have focused mainly on actively seeking service delivery strategies proven to be effective in 'like' organisations:

> We probably won't go looking at the Royal Melbourne to see if it works. We might look at Ballarat or we might look at Sale or Hamilton…if it works at the Royal Melbourne I wouldn't guarantee that it is going to work here (g11).

While many of the emergent themes on rural/metropolitan differentials identified difficulties encountered by rural practitioners in implementing evidence frameworks developed in the urban context, the benefits of rural practice in enhancing multi-disciplinary EBP were also apparent. Feedback from eight interview participants described the strong link between successful multi-disciplinary evidence-based approaches and the unique aspects of rural practice. Participants argued that, within a rural context, service constraints act as a mechanism to enhance a multi-disciplinary approach because they promote an increased capacity to share and learn about evidence across discipline boundaries.

> The multi-disciplinary stuff's a lot easier and you can learn a lot more because our rehab gym's one gym where we're all in there, so you're finding out evidence why the speechies doing that and the physios doing that, whereas in your bigger rehab settings there's a big physio department that the client comes to (o11).

This factor has also been identified (and documented in a previous subsection) as facilitating the development of the clinical pathways as a multi-disciplinary approach to evidence-based practice.

The final issue exclusive to the rural context found affect the applicability of EBP to the BHC practice environment relates to the expanded role of the rural practitioner: the expert generalist.

6.5.5 Expert Generalists

Nine interview participants and 24% of written questionnaire responses identified the expanded role of the rural practitioner—a role requiring a broad-based knowledge of a wide variety of different conditions. One of the issues raised by interview participants was the difficulty faced in sustaining an evidence-based approach in the face of the diversity encountered in rural practice:

> Here we are general therapists. We see everything. We see paediatrics and geriatrics and so one minute you can be treating a 2 year old and the next minute you're actually going on the ward to see a 78 year old stroke, so I think it becomes a lot more challenging to make sure that what you're adopting with all your therapy is evidence-based (v11).

> I can't specialise in one area and become really knowledgeable in that area…I think also that is one of the reasons why we haven't actually had a very strong evidence base. Think of the broad scope of the work picked up by staff - there is no way you can pick up all the evidence for everything you do at work- you would be up before you went to work and starting on collection. You can't sustain that… and there's not a lot of evidence specific to rural practice (i11).

In an environment in which the practitioners 'do general surgery, do the rehabilitation, do general medical things, do psych, do detox' (v10), the ability to adopt an evidence-based approach decreases in response to the increase in scope and diversity of what needs to be understood. EBP—as developed currently through agencies such as the NH&MRC and the Cochrane Collaboration—provides an effective framework for single focus practitioners working on singular treatment needs. The complexity and diversity of rural practice means that the rural practitioner operates as an expert generalist—a concept significantly at odds with the notion of EBP, which promotes specific rather than general expertise.

6.5.6 Constructs of Rurality: Summary and Discussion

The data analysed for this section has provided the following key insights in relation to BHC:

- The BHC organisation was assessed by staff to be at the optimum size and structure to support the successful resourcing, development, and implementation of clinical pathways. There were high levels of team cohesion at the site. Participants linked this to the smaller number of practitioners at the site and the capacity to manage change effectively across a compact infrastructure.

- Health service fragmentation was identified as a barrier to developing a uniform organisational approach to EBP. Geographic isolation from the main health service site, coupled with parochialism and unwillingness by the smaller site to adopt organisational directives, was problematic.

- While the size and structure of BHC allowed for team cohesion and facilitated the successful adoption of the pathways, it was assessed as limiting uptake of EBP by individual clinicians, outside of the boundaries of the pathways. The barriers to achieving EBP independent of the pathways were significant. Professional development opportunities were limited due to the distance of the rural site from, generally, metropolitan-based, training opportunities (Blue & Howe-Adams 1993). While BHC staff had adequate access to internet and library resources, this was assessed as insufficient to support EBP adequately. Practitioners, particularly allied health, identified the importance of interactive training and having the opportunity to work with a greater number of peers to enhance understanding of EBP. Research into effective interventions found the value of interactive processes and peer support far outweighed the benefits of passive learning techniques, such as the internet and journals articles (Bauchner 1999; Ferlie et al. 2001; Grol 1997; Jamtvedt et al. 2004; Mittman, Tonesk & Jacobson 1992; Nutley & Davis 2000; Putnam et al. 2002). As identified by Taylor, Wilkinson and Blue (2001), the rural environment limits practitioner capacity to access this type of pivotal skill development support.

- While the pathways program allowed local customisation of available evidence, the evidence available outside this initiative was assessed as being incompatible to rural needs. Its development in and tailoring to metropolitan locations was seen to lack transferability to the BHC setting. This assessment reflects the findings of McCarthy and Hegney (1998) and Humphryes et al. (2002) on the failure of metropolitan policy initiatives such as EBP to cater to the needs of rural locations.

- Rural practice requires practitioners to operate as generalists (McDonald 2001; McDonald & Smith 2001), which reduces the transferability of much of the available evidence. Practice constraints and demands limited the ability of BHC practitioners to specialise in the same way as their metropolitan counterparts, while the scope of practice restricted their capacity to remain appraised of the plethora of available evidence. This fact was pivotal in providing the motivation for developing the clinical pathways. The pathways were introduced to overcome some of the issues created by metropolitan/rural differentials, through ensuring a localised and customised mechanism to support the generalist worker:

> The city they …they're much more likely to give standardised care than we can because we don't have all those specialists. So we therefore need to have it written so that it doesn't matter who actually is taking care of that patient. Doctors, nurses, Allied Health staff they actually have, at least guidelines for, for the right care and what should be done on certain days and so that we don't lose anyone…so because of the generalist nature of rural communities, evidence-based practice (in the form of pathways) is more important rather than less important (k11).

6.6 THE PLACE OF EBP IN THE BHC PRACTICE SETTING

The BHC case study depicts a health service environment that developed a site-specific response to overcoming the barriers the constructs of rural practice place on the implementation of EBP.

The pathways program illustrates effectively the role of the organisation in supporting EBP implementation, albeit with a very targeted and treatment-specific sphere of influence. BHC provides a practice example of a process that contemporary literature has charted and promoted as instrumental in supporting the uptake of EBP (Ashburner 2001; Cockburn 2004; Ferlie et al. 2001; Stetler 2003). The guidelines process incorporates notions of organisational resourcing, localisation, and customisation, and is enhanced by the use of champions at the clinical, executive, and administrative level. Further, the multi-disciplinary nature of the pathways provides a working example of coordination of evidence to inform multi-disciplinary approaches to practice. These strategies, underpinned as they are by a commitment to quality and team-based approaches to health, have been shown to be successful, both within BHC and as an intervention to increase uptake of EBP (Shortell, Guyatt & Haines 1998; Walter, Nutley & Davies 2003a). Their complexity represents a rejection by BHC of linear notions of implementation and a commitment to multi-directional strategies to achieve clinical change at the individual practitioner level. This is a significant achievement for BHC in improving health outcomes.

This study illustrates, however, that by limiting organisational change strategies to specific treatment areas—facilitated through resourcing designated individuals—benefits are isolated. While overall health outcomes may improve, there is no corresponding enhancement in independent individual practitioner adoption of EBP. Analysis of data has shown that, excluding pathways (which are informed by evidence but require little skill development around EBP for the majority of pathways users), uptake of EBP remains minimal. BHC practitioners confronted the same complex issues identified by Dopson et al. (2002). Discipline frameworks, the availability of evidence, the influence of professional networking, and the maintenance of professional boundaries continue to shape the levels and nature of EBP implementation. The examination of the BHC environment *has* provided new insights relating to the specific ways in which rurality compounds these complexities for the rural generalist practitioner. Rural isolation from resources and professional development, the failure of available evidence to be transferred readily to the rural context, and the requirements for workers to be experts across broad spheres of practice all combine to threaten the notion of EBP as a viable practice tool for the remote practitioner.

7
Case Study C: Hopwarrah Health Services

THE EVIDENCE-BASED EXPERIENCE IN A REMOTE TOWN IN REGIONAL VICTORIA

"*Sometimes I'll hide behind the bread aisle in the supermarket but then they will just ring me at home*."

7.0 INTRODUCTION

This chapter presents the findings relating to the last of the three case studies—the Hopwarrah Health Services (HHS) study site. HHS is a small, multi-site health service providing acute, sub-acute and community based primary health services across a large geographical area in remote Victoria.

The results are presented in eight sections. The first two sections provide a description of the HHS organisation and the profile of HHS study participants. The next five sections focus on a detailed discussion of the themes and sub-themes developed during thematic analysis of data and the impact of each of these themes on the uptake and applicability of EBP to the HHS practice environment. Each of these themes and the associated sub-themes are presented diagrammatically in Figure 14. The eighth and final section provides a discussion and consolidation of findings outlined throughout the chapter.

Figure 14: Emergent Themes HHS

Catherine, this is on a separate PDF file

7.1 THE HHS ORGANISATION

7.1.1 Service Overview

HHS is a relatively new service that was created from an amalgamation of three small hospitals in a large rural farming community within a catchment area of 10,000 square kilometres. HHS is located 100 km from the nearest rural city and 400 km from the nearest metropolitan city. The health service caters to the needs of approximately 6,000 people across the catchment, although the population is in steady decline and the demographic profile of this area shows a population that is significantly older than the Victorian state profile. The median age of the population of the HHS catchment is 42.2 years, with 45% over 46 years of age, which compares to the Victorian median age of 35 years, with only 35% of the overall population aged over 45 years (ABS 2003).

The services provided by HHS include:

Inpatient:

- General Medicine
- Paediatrics
- General Surgery
- Obstetrics
- Cardiac Care
- Primary Care Services

Outpatient:

- General Medicine
- Physiotherapy
- Podiatry (fee for service contract)
- Occupational Therapy
- Speech Pathology (unfilled position at time of study)
- Optometry (fee for service contract)

The service has 140 beds (40 acute beds, 46 high care beds, and 54 hostel beds associated with seven independent living units). These services are sited over the three campuses that comprise Hopwarrah Health (Service Plan, HHS 2001)[1].

7.1.2 Staffing Profile

A total of 223 staff are employed by this organisation across different service areas, as outlined in Table 36 (Service Plan, HHS 2001). A significant number of these staff work part-time with the actual Equivalent Full Time (EFT) staffing for the service at the time of data collection standing at

[1] The amalgamation was a staged process that occurred between January 1999 and January 2001. The three sites included in the amalgamation are located at approximately sixty kilometre intervals from each other. This means that Site 1 is sixty kilometres from Site 2 which is then a further sixty kilometres from Site 3 – making Site 1 approximately one hundred and twenty kilometres from Site 3)

140.27 EFT. The recruitment and retention issues faced by the health service, as detailed in later parts of this chapter, impact on its capacity to fill all positions with qualified staff. A unique aspect of this service is that the vast majority of allocated positions, in terms of health practice, are for nursing staff working across acute, sub-acute, and community settings. Nursing comprises 49% of the total staffing profile, while the remaining health disciplines (excluding assistants) comprise 6%.

Table 36: Staffing Allocation for HHS (EFT)

Staffing Type	**Staffing Numbers**
Nursing, including community nursing	69
Administration/Clerical	17
Allied Health (including personal carers and health assistants)	18
Domestic services/maintenance	35
Medical	1
TOTAL EFT	**140**

7.1.3 Organisational Structure

HHS operates within a relatively flat organisational structure. A CEO is employed under the management of a community-based board of management. The three senior management positions for the organisation, who each report directly to the CEO, are Director of Nursing, Director of Corporate Services, and, Director of Aged Residential Care. Each has responsibility for their allocated portfolio areas across the three campuses. Each campus has a manager who is a clinician (nurse) and an administrator, with responsibility for nurse management and service delivery at that campus. Operational staff report to these managers, as illustrated in Figure 15.

At the time of data collection, HHS was undergoing organisational restructure, which had not been finalised at the completion of the data collection and analysis process. This lack of resolution of organisational restructure issues had a significant impact on the uptake and applicability of EBP in practice. This factor will be explored later in this chapter in detail.

The organisational structure and staffing profile of HHS impacted on the data collection process and the ability to adhere to the sampling criterion set for the study. Staffing numbers at HHS are such that site or treatment area specialisation is not possible, and staff must operate as generalists across service delivery areas and across campuses to meet service needs. This means that staff, as a matter of course, work at more than one job in any given week, and that each practitioner may, quite possibly on a daily basis, move from hospital to community, from acute to community-based, and from acute to sub-acute service delivery. The impact of fluidity in work focus made adherence to the study criterion sampling parameters difficult, as was outlined in the methodology chapter.

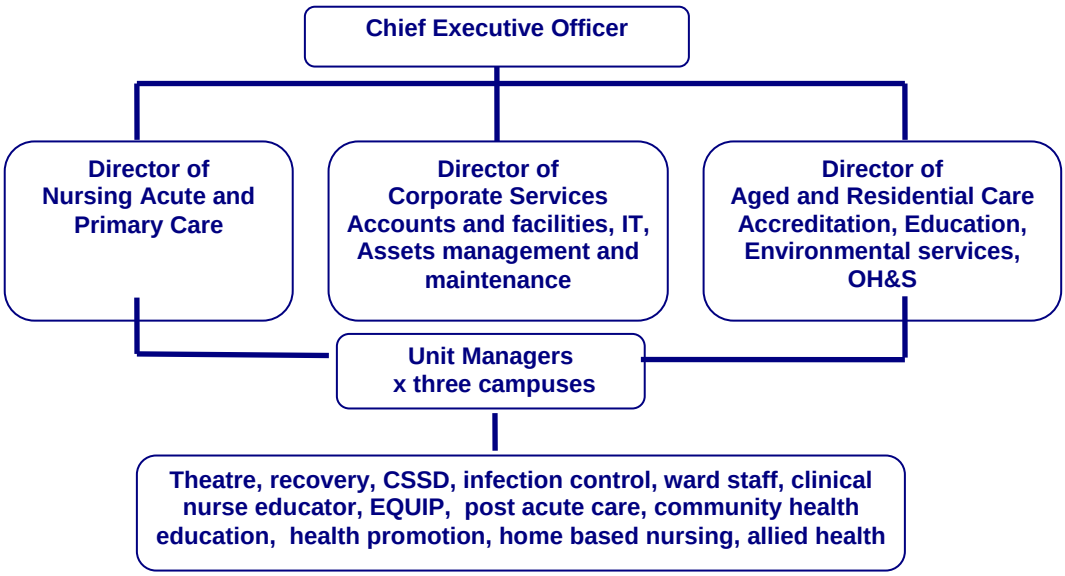

Figure 15: Organisational Structure HHS

7.1.4 The Organisation and EBP

An analysis of agency documentation found no specific reference to programs or strategies aimed at facilitation of the adoption of EBP across the organisation. While the agency was working through a process of service accreditation, and, consequently, was putting in place a number of quality initiatives, these related to records and data management rather than to the introduction of mechanisms to enhance the use of EBP. Interview feedback identified that the formalised process of using evidence in practice was in its infancy at HHS, with senior clinical staff identifying that 'We haven't done a lot of stuff here yet…to put evidence-based practice into things here at the moment would be totally impossible because the middle managers don't have the knowledge or ability to drive such things' (r15).

While there was an acknowledgment of the need to promote best practice, it is important to emphasise at the outset that HHS, as an organisation, had no formal process or documented organisational agenda in place for promoting or facilitating the use of evidence in practice.

7.2 PROFILE OF HHS STUDY PARTICIPANTS

The following section provides a profile of the practitioners participating in the HHS study and clarifies issues relating to numbers and types of staff available for participation.

7.2.1 Study Participation Levels at HHS

HHS practitioner participants were recruited from six disciplines working across its three health service sites. Recruitment and retention at HHS are problematic. At the time of data collection, the position of speech therapist was vacant, and the dietician and podiatrist provided a limited sub-contracted service that could not be included in the data collection process due to time and agency funding constraints. Additionally, both these disciplines were identified by management as external to the service due to the 'fee for service' nature of their involvement with HHS. Participation rates are provided in Table 37, and a specific breakdown of involvement level by discipline type is given in Table 38.

There are some significant discrepancies between the participation rate figures and the EFT allocations depicted in Table 36, and these need to be clarified at this point. Although Table 36 identifies that HHS had an EFT allocation of 68.99 for nursing, recruitment and retention issues meant that the number of nursing staff available for involvement in the data collection process was much less. HHS management identified that a significant number of staff were either external nursing pool staff or part-timers and that the service was regularly a minimum of at least eight Division 1^2 nursing EFT short of funding allocations. Consequently, while the organisational EFT allocation for nursing was high, the total number of nursing staff identified and nominated for involvement in data collection (and represented in these figures) is a much smaller pool of 13. The nursing staff subsequently nominated by management for involvement in the data collection were mainly from sub-acute areas.

Table 36 lists Allied Health EFT at 18; however, this figure includes the personal carers and health assistants excluded from participation (across all three case study sites) because health discipline rather than para-professional input was targeted. The actual number of allied health professionals available for participation in the study was seven.

Although only one medical EFT was specifically allocated to HHS, five medical staff (including those in private practice) practiced across the area serviced by HHS. As HHS management

considered all to be integral to health service provision at the site, all five were approached for involvement in the questionnaire component of the study.

Table 37: Data collection participation rates at HHS

Data Collection Method	Number of participants	Discipline Areas
Questionnaire	19 multi-disciplinary health practitioners	Refer to breakdown in Table 38
Individual Interviews with health practitioners	14 staff *(sub set of questionnaire participants)*	Medicine (1) Nursing (9) Physiotherapy (1) Occupational Therapy (1) Pharmacist (1) Social Work (1)
Group interviews	2 teams (Primary Care Team (PCT) (Management Team (MT)	**PCT** **MT** Social Work (1) Chief Executive Occupational Therapy (1) Director Nursing Physiotherapy (1) Director Finance Nursing (6)
Individual interviews with management	3 management staff	Director of Nursing Director of Finance Chief Executive Officer

Table 38: Sample size involved in data collection at HHS

HEALTH DISCIPLINE	Total N	Questionnaire n	Individual & Group Interviews n
Medicine	5	2	1
Nursing	13	11	9
Social Work	1	1	1
Physiotherapy	2	2	1
Occupational Therapy	2	2	1
Diversional Therapy	1	1	-
Pharmacy	1	-	1
Management	3	Not included	3

[2] A Division 1 nurse has qualified, after 3 years of study, either through hospital-based training or university studies. Division 1 nurses perform and are accountable for a range of clinical interventions. They have supervisory responsibility for Division 2 nurses (Nurses Registration Board of NSW 1999).

Total numbers	**28**	**19**	**17**

The overall return rate for questionnaires across all disciplines was 76% (n=19), with the highest return rate from allied health practitioners (six out of seven). There was also high representation from all targeted discipline areas in the group and individual interviews.

The size and structure of the HHS participant pool provides the first insight into the nature of service delivery at HHS. This is an organisation characterised by a small workplace structure with a large number of nurses. Other health discipline areas had a pattern of single practitioner representation, or dual representation with practitioners sharing a single, full-time staffing allocation. The exception to this was physiotherapy, which had one full-time and one part-time staff member. This structure reflected and shaped the agency's service delivery capacity and staff development potential and was a direct result of the organisation's remote setting.

The issue of rurality at HHS cannot be relegated. At HHS, rurality is paramount; data analysis highlights the primacy of this location context on levels of adoption or non-adoption of EBP. Given this, the following section examines findings specific to the HHS organisational profile in an acknowledgment that the interconnectedness of organisational size and degree of rurality as a factor determining the status of EBP at this site cannot be overemphasised. Remoteness has shaped the size and structure of the HHS organisation and has been (and remains) instrumental in driving the lack of organisational ethos around EBP.

7.3 REMOTENESS SHAPING THE ORGANISATIONAL PROFILE

Prior to undertaking a detailed examination of the organisational profile of HHS and how this affects the applicability and uptake of EBP at the site, it is imperative to explore the HHS organisational culture around the use of evidence in treatment decision-making.

7.3.1 EBP and the HHS Organisation

The perceptions of health practitioners at HHS around the value of using evidence in practice were measured quantitatively and qualitatively. Questionnaire data revealed the attitude among HHS practitioners to EBP to be positive overall. Questionnaire results, as depicted in Table 39, show that 14 out of 19 participants saw EBP as having the potential to improve treatment in the practice environment. This result is in line with studies by Guyatt et al. 2000, McColl et al. 1998b, and

Taylor et al. 2002 who all found that the vast majority of health disciplines viewed EBP as a positive paradigm for health practice.

Table 39: HHS practitioner attitude toward the concept of EBP

HEALTH DISCIPLINE	Total n	Negative n	Positive n
Medicine	2	1	1
Nursing	11	3	8
Social Work	1	1	
Physiotherapy	2		2
Occupational Therapy	2		2
Diversional Therapy	1		1

These results mirror findings from the interviews, in which 11 of the 14 health practitioners interviewed also assessed EBP to be a positive development in the health service sector, although this did not automatically translate to its actual use. Statements such as 'I think that would be of great benefit (n13)' and 'It would be a great way to keep on track' (t14) are indicative of these views.

Given these outcomes across both data types, it is important to assess the extent to which a positive attitude to the concept of EBP was a result of—or resulted in—a strong organisational agenda supporting the adoption of EBP at HHS. Feedback from management staff at HHS portrayed the organisation as a health service with a commitment to quality and the use of evidence in practice. All management staff in individual and in group interviews reiterated this commitment as a fundamental organisational management principle. They did clarify that this view was closely linked to the fact that HHS, at the time of data collection, was completing, for the first time, a process of health service accreditation. HHS was the last health service in Victoria to undergo accreditation and, thus, differed from the majority of urban and regional health services where accreditation had been an intrinsic aspect of service delivery since the late 1990s. In 1997/98, 61% of Victorian hospitals gained accreditation after the government made it mandatory for all hospitals providing public acute services to have accreditation by the year 2000, and all aged care and sub-acute facilities to be inspected by the Standard Agency for Aged Care prior to January 2001 (Department of Human Services, Grampians Region, 2003). Given these mandatory requirements,

the fact that HHS did not achieve accreditation until 2003 is a unique discrepancy between this agency and the majority of other acute and sub-acute services in Victoria.

There was a general acknowledgment by all management staff and by 12 of the 14 health practitioners interviewed that the accreditation process had been a trigger for a review of practice at the HHS site, and that the agency, pre-accreditation, had been operating in an environment where service delivery failed to meet quality standards:

> Everyone just sort of looked and went 'Oh God, you know our nurses aren't up to skill, they're not up to the level of competency that they should be, and we are basically running a hotel instead of a hospital service' and those sorts of things [h12].

Data collection for this study occurred, therefore, in a climate of vigorous organisational promotion of meeting a set of pre-established standards. The currency of this process did blur data collection because, although it heightened awareness regarding quality and outcome measurement, it also encouraged an assumption by administrative management staff that an organisational commitment to accreditation translated immediately to an organisational commitment to EBP. This view was linked to the fact that some HHS senior management staff were from an administrative background and, as such, used different language and were informed by different practice paradigms than clinicians. This issue, which arose at interview, will be reported on in detail later in this chapter.

The extent to which the establishment of accreditation standards acted as a precursor to a broader adoption of EBP in the HHS practice environment was vigorously debated by health disciplines involved in the interview process. While participants unanimously identified an increased organisational awareness and promotion of an evidence-based agenda since accreditation, there were divergent views around the degree to which the organisation had encouraged and promoted the concept through concrete and measurable operational strategies.

Of the 14 health practitioners interviewed, six believed the health service post-accreditation had advanced an active agenda promoting increased staff development and training to maximise staff knowledge and skill bases. The appointment of a Nurse Educator to facilitate this process was provided as an example of a specific, organisationally driven strategy instigated to support the accreditation process and, later on, to facilitate skills development and maximise best practice across the health service.

> We took on accreditation type practices and to get up to standards and now if you are not showing that evidence based approach you won't be given such a standard by the authorising

> bodies and it can affect your delivery of service to the community… continued education is very strongly looked upon (by management). Some of the areas within the hospital are not as active as they used to be before because the practitioners are not up the standards, and that's an example of a decision based on evidence (f12).

Conversely, all participants in the multi-disciplinary health team interview, and eight out of 14 health practitioners interviewed individually argued that, outside of the accreditation process, there was no structured organisational support provided to facilitate the adoption of EBP. These perceptions are captured in the following statement from a multi-disciplinary team member, which relate to a discussion around the discrepancy between the notion of promoting quality for the purpose of accreditation and the reality of providing facilities such as computer database access to support the adoption of EBP as an integral aspect of individual practice:

> We actually scored many, many gold stars in accreditation and the hospital waved the flag and said 'isn't [the service area] wonderful', 'you people are so fantastic' 'you do such a wonderful job' and they still hold our computer up…they're happy to milk us and have big write ups in the paper but when it comes to actually supporting us (to develop EBP) we find our support is actually very, very little [e16].

This group of interview participants argued that it was necessary for support to be tangible if EBP was to be adopted in the HHS practice setting. Constraints intrinsic to remote practice, such as recruitment and retention, geographical isolation, and limited access to evidence-based research resources (Strasser et al 2000; Taylor et al. 2001), made it imperative that organisational commitment move beyond the notional. The general expectation of this group of practitioners was that the current philosophy of EBP promotion would be accompanied by an introduction of EBP driven by inadequately resourced practitioners rather than through a structured organisational framework operationalising the change process:

> I'm new to the health service and I find that there's nothing here …we have to bring up new protocols and they want that to be evidence based it is taking forever to get that information…There's no resources I find, there's no resources for us to get out and find the resources (n14).

This was deemed particularly problematic given the limited capacity of remote location health practitioners to independently seek resources such as professional development and collegiate networking in the way that their urban counterparts do. The scope of these issues and their relationship to EBP will be explored in greater detail later in this chapter.

The lack of any formal mechanisms in agency documentation to support EBP validates the assessment that structured organisational strategies had not been incorporated into the organisational profile of HHS. There was no evidence of formal, organisation-wide, structured evidence-based guidelines on best practice for particular treatments. Guidelines development was identified as a pivotal implementation strategy by 12 of the 14 health practitioners interviewed because 'unless it's done properly [organisation-wide] things fall down…it is a good idea but there's got to be guidelines to how we do it and everyone's got to be able to do it' (f16).

Despite these variations in practitioner assessment of the organisational agenda around EBP, there was universal agreement about the critical role played by the remote context on organisational capacity to adopt a functional response to promoting EBP at HHS. Participants identified that EBP in this organisation could not be understood without detailed consideration of two key factors: organisational size and structure; and the recent process of organisational restructure that had shaped developments at HHS. Further, both needed to be overlaid with the remote context inherent to the HHS environment.

7.3.2 Organisational Size and Structure

The size and structure of the HHS organisation was identified as a central factor in the adoption of the evidence-based paradigm by all management and all health disciplines involved in interviews.

> If you work in an organisation that has a whole strata of managers who concentrate on quality and policy development well you'll probably end up with the best policies and protocols on paper because there's a lot of resources put into it and I think it does affect it (the ability to introduce EBP in a structured way)…it's hard for organisations like this (a13).

As identified previously, HHS had a flat organisational structure with limited middle management resources. This structure resulted directly from the size and staffing capacity of the organisation, with the vast majority of staff employed in direct service delivery. This was acknowledged by all management staff during individual and group interviews to be a central factor in the ability of HHS, as an organisation, to introduce organisation-wide policies and practices around EBP. The extent to which this structure impacted on EBP is captured in the following assessment by the management team of the limitations placed on the organisational agenda to promote EBP uptake: 'At the moment there is no impact on the ground because we don't have a well supported middle management team that can actually drive those things to the ground level' (b16).

While this statement reinforces previous practitioner assessment of the lack of strategic organisational support for EBP introduction, it also highlights the difficulties faced by a management team of three, in a small organisation, around a number of complex service delivery issues caused by isolation and remoteness. These difficulties were acknowledged by management and health practitioners alike, as indicated in this statement by a non-management participant:

> The management workload is taken with things like the recruitment and retention issue and therefore they don't have as much time to put into the clinical side of things…in a bigger place I think there would be a better chance to get the information to the clinicians but here it (EBP) is prioritised a long way down the line (a16).

A minority (n=4) of health practitioners identified that the lack of management capacity to establish an organisational agenda for EBP had prompted health practitioners to develop strategies independently for enhancing their work practices through the use of evidence. These practitioners also argued that the size of the organisation was beneficial to enhancing the ability of practitioners to share evidence-based information of interest.These views are captured in the following extracts:

> We tend to do our own things, we tend to resource our own information and get our supporting information if we're actually wanting to go ahead with something … you know, we've been without (viable) management here for a long while (j12).

> We do all collaboratively work together and if anyone's every reading anything and finds it is relevant for someone else then you know it goes straight into their basket you know, you feed that information to the right channels (k12).

However, the majority of participants considered the organisational size and structure of HHS had negative rather than positive impacts on the development and implementation of EBP. These practitioners argued that, while the ability to go directly to the Chief Executive Officer or the Director of Nursing for issues clarification and/or resolution was a unique and positive aspect of remote practice, the resource constraints inherent to the organisation were far more limiting to the evidence-based movement, for three key reasons:

- Management had limited capacity to allocate portfolio responsibility and resources to EBP and embed it as a consistently applied concept across the organisation.
- The small number of practitioners from each discipline at HHS, with the exception of nursing, prevented collegiate-sharing of discipline-specific evidence and failed to allow for regular cross-reference and discussion of options for evidence-based treatment strategies.

- The workload of health practitioners in a service site the size and structure of HHS limited the time available that could be spent on tasks linked to EBP.

Just as the management workload is overloaded with the complexities of running a health service in a remote location, so too do the demands of remote practice limit the capacity of practitioners to establish an evidence-based approach to practice. HHS practitioners, due to their small numbers and the geographic isolation of the service, spend a significant proportion of their time in service delivery. This restricts their capacity to extend practice to incorporate the administrative functions and professional development linked to EBP—unless the work occurs outside paid work hours.

> If you're small, a lot of your time is in actually delivering. You don't actually have the time to sit back and say: 'What's actually happening in terms of evidence based practice I need to change my system'…in the smaller organisations you don't have that capacity to even talk about the journal article with someone else and saying 'Can we try that? What does that mean for us?'…a small organisation - it's up to you, we're already flat out, I can't (c16).

While the scope, nature, and impact of rural workplace demands are explored in detail later in this chapter, it is important to note the extent to which the inter-relationship between organisational size and structure, and the nature of rural practice, has been seen to curb the development and implementation of EBP at the administrative and the clinical levels. As identified at HHS, the remote context shaped the organisational profile and drove resource availability and attainability. Similarly, the demands placed on practice by the remote setting—when considered against the size and structure of the organisation, which determines the number of practitioners available to respond to service need—compound to create a practice environment in which EBP is considered difficult to attain. The scope and cyclical nature of these inter-relationships, as conceptualised from the interview feedback from HHS staff, are depicted in Figure 16.

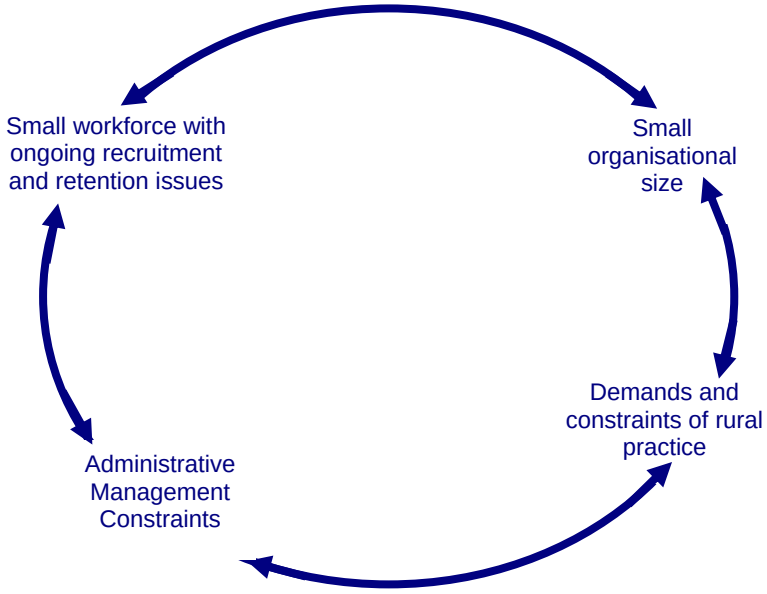

Figure 16: The HHS Organisational Environment

Two specific components relating to 'administrative management constraints' were identified through analysis of interview data as emerging from organisational size and structure and being instrumental in shaping the HHS organisational environment and subsequent capacity to apply EBP. These related to the organisational restructure issues currently affecting service planning and development at HHS, and the discipline-specific composition of the HHS management team as established at the time of data collection.

7.3.3 Prioritisation, EBP, and Organisational Restructure

The 1990s in Victoria was characterised by a government policy agenda which, underpinned by economic rationalism, saw health service review result in a significant number of health agency amalgamations. Against this policy backdrop, amalgamation became commonplace in metropolitan and rural locations alike. HHS, at the time of data collection and at the time of writing, was undergoing a process of organisational restructure resulting from the amalgamation of the three service sites. This amalgamation was in response to service delivery and budget management issues that have remained problematic across the organisation. Interview data sought to clarify the extent to which a major organisational restructure was likely to impact on the capacity of HHS, as a remote health service, to use EBP.

While HHS, at the time of writing, was three years into the amalgamation process, interview feedback from all participants highlights that many service delivery and budgetary issues remained

unresolved. This had had a major impact on the status of EBP at this site. Interview participants identified that, in an environment in which management and clinical staff struggle to resolve the basic issues of adequate staffing, resource availability, and management infrastructure, concepts such as EBP have low priority.

> We haven't done a lot of stuff yet because of the problems that currently exist here. If you've got a situation where you are working through basic organisational management issues, there's no capacity to look at expanding into things like evidence-based practice. The middle management team that we're developing is very under-educated, so to put some evidence-based practice into things here at the moment would be just totally impossible because I don't think the middle managers have the knowledge or the ability to drive such things (s13).

As recognised previously, amalgamation and organisational restructure is not unique to the remote context. In the case of HHS, however, the remote context was identified specifically by study participants as inhibiting the organisational restructure progress, because the organisation had limited capacity to fill management positions with individuals skilled and experienced enough to support the transition to a new, larger, and more complex organisation. This shortfall related to both strategic and clinical management as the health service was still struggling to replace staff lost through amalgamation and/or recruit senior clinicians to manage health service delivery in the restructured service environment. This consequence of restructure was identified by all participants in the interview process as a major factor in the capacity of HHS to support an organisation-wide introduction of EBP.

> There was a lot of redundancy and middle management was virtually wiped out but in actual fact to do all of this (introduce EBP) you've got to have people who have been trained and educated and able to actually develop that sort of system in light of what we're trying to do, (h16).

At the time of data collection, all management staff and 11 of the 14 health practitioners interviewed believed that despite identified problems HHS was 'starting to emerge from that chaos to become more focused (w13)'. However, there was also a clearly stated belief from all participants that HHS was a long way from placing EBP at the top of the priority needs list it had established as a restructured health service organisation. The priority given by HHS to EBP is captured effectively in the following statement, which accurately represents the view of interview participants:

> [We] are looking down the track, in the future to be evidence based, at this stage we haven't done it …we've got to get our own policies and protocols in place before we can actually use evidence-based…we've got to get ourselves organised before we can actually probably bring in evidence-based to have some base line (j16).

Closely linked to the organisational restructure process, and also identified as influencing the adoption of EBP at the HHS study site, was the composition of the current management structure at HHS.

7.3.4 Clinical vs Administrative Management

The HHS management team comprises both clinical and administrative staff, each with portfolio responsibility for specific areas of organisational management. These areas—management of organisational finances, strategic planning, and health service delivery—do not differ in any notable way from the general portfolio areas that typify health management throughout Victoria, notwithstanding that HHS operates (as a Category E classified health service), on a smaller scale in regard to staffing, funding, and infrastructure than health services with higher order classifications. The area where the nature of management responsibility at HHS was identified as having the potential to impact on the adoption of EBP was in the decreased number of individuals available, at the management level, to make clinical and administrative decisions relating to health service delivery and resource management. This factor impacted at the organisational management and service delivery levels.

In health services where there are large teams specific to either clinical or administrative management, the areas of portfolio responsibility are very clearly delineated. There is also an increased capacity for decision-making informed and rationalised by discipline-specific knowledge. Acknowledging some intersection of these functions at a macro level, health disciplines inform and promote the implementation and/or review of treatment initiatives, while administration focuses on administrative functions such as resource allocation and budget management. The senior management team—a mixture of administrative and clinical representatives informed by these combined knowledge bases—make strategic organisational decisions. At HHS, while the organisational structure mirrored this approach, roles overlapped due to the small number of staff in the management team and the absence of a strong middle management team. This was identified, during data collection and analysis, as having the potential to inhibit the adoption of EBP in a number of specific, linked ways:

- the way in which an administrative manager is perceived by clinical staff and managers and, arising from this, how an administrator's opinion in promoting the adoption of EBP will be viewed by clinicians;
- the capacity of the administrative manager, trained in an alternative paradigm, to understand, prioritise, and promote EBP in a remote environment with competing agendas for resourcing, linked to geographic isolation and staffing constraints; and
- the potential for divergent agendas between clinical and administrative decision-makers in the health service organisation.

Interview data from HHS management and health practitioners revealed a discrepancy in assessments of the role of administrative management in promoting the use of EBP.

Management interviews assessed that HHS practitioners were responsive to input from management on the issue of EBP (the examples given of this input were not specific to EBP, and included such things are filling in required reporting formats). They also stated that the fact that decisions were made by a management team with significant administrative representation was not considered an issue by clinical staff. The essence of this view is captured in the following interview extract:

> I don't think here they (administrative management) have been a problem because they have seen the previous lack of middle management to be able to make decisions so they've accepted what we have said to do. In other places, I would say no to that because the clinicians think that they make their decisions based on evidence based practice, and they would tend to think that management should not really interfere on the floor in day to day practice. But here, in this organisation, I don't think it works like that. The clinicians are looking for guidance and for us to tell them what to do (m14).

The interview process also sought to clarify the rationale behind management perceptions on why administrative input to clinical practices was accepted at HHS. Management participants considered acceptance by the majority of staff to be closely linked to the agency emerging from a period of intense restructure and the fact that administrative management had been able to build a relationship of trust with clinical staff:

> People will adopt a certain approach if it was promoted by someone who is not a clinician because people, regardless of the position you have in the organisation, will form a view of whether you can be trusted, how they view you as an individual, and, if they have a respect for you as an individual, they will respect and take on board if you are supportive of something even though it may not be in your role… if you've got the respect in your own particular

> professional discipline, other professional disciplines will say ‘well they may actually have something to offer’, they may think ‘we should look at this’ (v13).

This assessment by management of administration’s ability to guide and promote the introduction of EBP was not supported entirely in health practitioner interviews. While it is important to note that a majority of eight health practitioners did not raise any concerns around administrative staff making decisions relating to the promotion of a clinical framework such as EBP, six of the 14 health practitioners interviewed did. These participants stated that they preferred not to have management promote an organisational agenda for incorporating evidence in practice. Statements such as the following are representative of the extent to which these practitioners were resistant to administrative management taking an active part in directing clinical decision-making:

> If you’ve got the management sitting here wielding an iron fist over you, you mightn’t quite have the same amount of enthusiasm or initiative to go off and do that. You tend to say ‘Well that’s their role and we’ll just keep doing our job’ (f12).

These practitioners were asked to clarify whether their views arose from a general resistance to senior management input or from a specific resistance to administrators making clinical decisions. The feedback received was that the lack of an established middle management, and the administrative focus of two out of three of the senior management team, meant that HHS management were considered mainly to be administrators rather than clinicians. Consequently, this structure was seen as driving the priority given to EBP across the organisation, with administrative staff generally considered to have a limited understanding of EBP and how central evidence is to effective practice.

> I don’t think management really understand the importance of it, the benefits of it, the way you can really try and improve your work practices by having that status that you've done your homework and you've really worked it through would be beautiful… but they think in terms of the days that they’re able to pay an [discipline area] and the area that I'm expected to cover and the work load…. I would have to cross time out of my diary to actually really do it (implement EBP) and then answer to them why my numbers are down or whatever. I think if I really pushed it again and again and again maybe I would get there but I that’s all I seem to do in the last few years is push and push and push and you get a bit tired sometimes (r14).

The level of administrative management knowledge and understanding of EBP was tested through the interview process, as management had not been targeted in the questionnaire distributed to health practitioners at HHS. Feedback received from management interviews suggested a limited understanding of EBP as it relates to clinical practice and a very close alignment of EBP with

strategic management rather than specific health treatment approaches. The essence of this interpretation of EBP by senior management staff is summed up in the following extracts:

> Statistical data, using various surveys, questionnaires in the community, just basically conversation with people, accessing the internet. We use a lot of this information because a health service has to have a service plan and it's meant to have a service plan for the government to actually undertake various things for the organisation. For example capital building program and varying funding submissions…And also for the Board to be able to make informed decision requires evidence based on information for them to make an informed decision. For their strategic plan (k16).

> My understanding of evidence based practice is looking at the particular ways of doing things which are then researched and demonstrated to be effective. And evaluated saying 'this particular type of management technique has worked in an XYZ organisation, these were the difficulties that were faced, or this was the challenge that we were looking at trying to solve… And seeing how that is worked in a number of other organisations. And saying well, does it have the applicability across the board, or is it unique to one type of circumstance (v13).

With the exception of the clinician involved in the management team, senior management understanding of EBP was found to be very general, focused on management techniques, and lacking in reference to the formal structures that define EBP in the health service sector such as the NH&MRC hierarchy of evidence.

The extent to which this strong administrative representation actually resulted in divergent agendas between clinical and administrative decision-makers on the issue of EBP was assessed through the individual and the group management interviews. All feedback, across all management interviews, reflected a consistent view around long-term management commitment to the introduction of EBP at HHS. Management, whether clinical or administrative, argued that they were 'not closed to new ideas and willing to listen, learning to look at different ways of doing things, and being supportive of an opportunity to try (w13)'.

Given that previous feedback on management commitment to the introduction of EBP had shown that eight of the 14 health practitioners believed that this management lacked functional strategies to support the use of evidence in practice, data analysis examined resource allocation for EBP.

At the time of data collection, the strongest evidence of a unified management shift toward supporting staff skill development around EBP was an increase in the promotion by management of staff development and training (a claim reinforced by statements from six out of 14 health

practitioners), the employment of a Nurse Educator, and the provision of two staff training sessions in the use of the Clinicians Health Channel databases. While these were management-driven initiatives, no evidence was available to clarify whether change had been instigated by either (or both) clinicians or administrators.

The relative newness of the accreditation process and the promotion of staff training and online initiatives meant it was not possible to measure their success. It was also not possible to assess whether an 'in principle' management commitment to EBP translated into adequate resource allocation and a subsequent increase in the use of EBP. Interview feedback around the uptake of staff training and the use of computer bases resources is discussed later in this chapter, with feedback suggesting limited impact at the time of data collection.

7.3.5 Remoteness Shaping the Organisational Profile: Summary and Discussion

Analysis of data from the HHS study site highlights the centrality of the organisational context in determining the use of EBP and provides valuable insights that extend the existing body of knowledge relating to evidence-base practice in the remote health service organisations.

Critically, the data in this section (and in subsequent sections of this chapter) cements the role of location context in determining organisational profile and, through this, establishing agency capacity in regard to EBP. Data analysis has clearly established that, for the remote service site, organisational and location context are inextricably linked. When examining organisational commitment to supporting the introduction of EBP in a remote environment, the data have revealed the following:

- The demands on the clinician in the remote setting, linked to staffing levels and geographic isolation, are such that the capacity for individual disciplines to pursue EBP independently is limited. The full extent of this issue will be explored subsequently in detail. Clinicians at HHS required the implementation of organisationally driven initiatives to counter the restrictions of remote practice. Without the support of an organisationally driven and functional response to EBP, the capacity to implement EBP effectively and consistently remained limited. While the importance of this type of approach has been identified consistently in the literature (Ashburner 2001; Ferlie & Shortell 2001; Ferlie et al. 2001), the need for this support increases exponentially in line with degree of remoteness. McCarthy & Hegney (1998) identified that limited infrastructure decreases the capacity of rural locations to adopt EBP. This study maps the extent to which this assessment holds true in a remote service context.

- The organisational management issues encountered by remote health service organisations are complex. The capacity of administrators and clinicians to allocate time/resources to development and implementation of an organisation wide strategy on EBP diminishes when placed against issues of recruitment and retention, lack of resources and rural isolation.

- The absence of middle management infrastructure staffed by clinicians is a major inhibitor to the development and implementation of an organisational strategy for EBP. In regard to remote health service organisations such as HHS, this highlights a fundamental flaw in urban policy on EBP: the assumption that all organisations have the operational capacity to introduce the paradigm (Humphries et al. 2002). This issue sits outside any question of organisational philosophy and is linked specifically to functional capacity to promote and drive EBP as a priority in a remote practice environment.

- The introduction of a new practice paradigm requires the existence of a stable organisational environment with clear organisational management frameworks. Unresolved governance issues, such as those resulting from the organisational restructure process that currently define HHS, have a significant impact on the capacity to adopt EBP. While organisational restructure is not unique to remote environments, resolution of issues becomes more complex as a result of the parameters established by this context.

- HHS, as a remote service provider, had a management structure with limited clinical representation. This restricted the number of clinical managers to champion the adoption of EBP, and resulted in decision-making by administrators who operated from a different worldview. While the impact of this could not be assessed adequately at the HHS site, this infrastructure has the potential to inhibit the introduction of EBP when management decisions are driven from an administration rather than health delivery agenda, in terms of resource allocation. Clinicians are resistant to outside directives (Ferlie, Wood & Fitzgerald 1999; Lomas et al. 1991) even if the outsider is within the organisation but outside the clinical sphere (as was the case at HHS). Research has shown that there are important differences between medical and management approaches to understanding, developing, and applying research (Axelsson 1999), and HHS provides a clear example of the impact of these differences in the practice setting.

The strength of the inter-relationship between organisational infrastructure and location context at HHS makes it critical to examine both these areas prior to assessing specific EBP application issues for HHS health practitioners. The exploration of these domains is pivotal to understanding the

specific ways in which remote service delivery differs from that in urban and regional settings in relation to EBP.

The following, therefore, examines the unique aspects of remote communities and the ways these shape remote practice and set the parameters around which EBP must be framed to be responsive and applicable.

7.4 RURAL IDIOSYNCRASIES

A prevalent theme to emerge throughout analysis of data from HHS relates to the strong community relationships that existed in this remote location and the manner in which these relationships influenced health service delivery. This occurred at two distinct levels. The first related to the close personal relationships between health practitioners and members of the local community. The second was linked to community perceptions of their rights in regard to health service delivery decision-making and community ownership of the local health service. These two levels and their implications for the adoption of EBP are examined in detail in the next two subsections.

7.4.1 Neighbours, Friends, and Patients: Role-Blurring in Rural Practice

People in the HHS community are commonly long-term inhabitants of the local community, well-known to each other, and/or are members of the same family. In this context, it is difficult to distinguish between the role of the individual as a community member and the role of the individual as a health professional living and working within that community. Health practitioners in rural communities are often a worker, a neighbour, a relative, or a close friend of the individual to whom they are providing a service. The nature of remote practitioner/patient relationships is complex and often blurred (Green 2003). Data collection sought to clarify this relationship and to ascertain how these relationships influenced the uptake and applicability of EBP. This process commenced with an examination of the specific nature of these relationships.

All interview participants raised the intrusive aspects of remote practice as the key influencing factor in setting the parameters of service delivery. The most common issue identified related to the fact that remote practitioners are never ‘offline’ within a remote community. The extent to which this factor shapes the life of the remote practitioner is captured by the following quotes, which effectively summarise the essence of the problem from the perspective of HHS practitioners:

> But here, at the end of the day you can’t go home and say ‘Well I’ve left Mrs such and such without this’. It’s not possible because they’ll ring you at night. So you might as well do it fully

> and properly, and go out of your way to make sure it's done, whether you've finished your work or not (g13).

> [What] happens in rural communities that probably never happens in a metropolitan area is if you know the nurse, if there's a nurse that lives 2 doors down …You're cornered; people just go down there and get her and to do the shopping takes 2 hours as people ask for advice while you're doing supermarket shopping … Someone showed me their theatre scar to get checked out in the supermarket. They also know your phone numbers very well - and they ring at all hours of the night, (k15).

> Sometimes I don't want to see anybody and I'll hide behind the bread aisle in the supermarket because I just don't want to see anybody. I've often had phone calls, just recently at 8.30 on a Friday night… but I mean I'm a member of this town, I'm a member of the community, that's part and parcel of your work (x16).

This feedback highlights a central aspect of remote practice and one that defines a fundamental difference between remote and urban practice. Beyond issues of isolation and resource availability, remote practitioners operate under a different set of expectations to those of their urban counterparts. During interview, all HHS health practitioners identified that many of the basic principles of service delivery such as confidentiality and duty of care have the potential to be compromised as a result of living and working in a remote location. The following extract from the multi-disciplinary team interview highlights this issue. It is important to note that all members of the multi-disciplinary interview group (nine health practitioners) supported and reinforced the points made by this participant.

> I found it an issue on terms of confidentiality too is that you're standing there and someone will come up and say 'Oh I want to see so and so' I saw the ambulance pull up at her place 2 doors down and I know her and I want to know what's wrong with her and why she's here and how long she's going to stay and all of this sort of stuff, and they really expect you give it and I've gone 'Well sorry I can't tell you' and they looked at me as though I was nasty… (l15).

These community expectations were identified by all health practitioners interviewed as resulting in a modification of practice because 'you can't just say this is what you're going to do because you look at it from a different angle when they're known to you (n15)'.

Having established the existence and impact of blurred roles, data analysis sought to clarify what these practice parameters mean in regard to the use of EBP. As health practitioners had identified in interview that remote worker/community relationships influenced the nature of service delivery,

clarification was sought as to whether practitioners would modify practice to accommodate need, even when the strategy chosen to accommodate need might work outside the established evidence-based guidelines. Analysis of qualitative data found all members of the multi-disciplinary interview group and 13 of the 14 health practitioners interviewed individually indicated they would modify practice to accommodate need or client expectation:

> [And in regard to evidence, even though the evidence says one thing] because you know them and if they don't want to go that way, you have to sort of change what you do to meet their needs… If they're not happy with that you go along with the client because ultimately they're right (g13).

> There can be a situation where the evidence says clearly this is what needs to happen, but the family member says 'Nah, I'm not running with that. I want this to happen' and you're locked into doing it that way because of knowing them so well (l15).

The issue of familiarity with community members also influences practice decisions made by the remote practitioner. Unlike many of their urban and regional counterparts, remote practitioners have an intimate knowledge of all aspects of the life of the patient and their home environment. Consequently, while the evidence-based guidelines might promote a particular approach (for example, a short-term hospital stay or home-based rehabilitation), local knowledge will be instrumental in determining practitioner practice decisions, regardless of the prescribed course of action of a particular treatment regime:

> You know if you take one person out of the house because they're ill, the other person won't be cared for properly or you know the family disputes that go on so you can't really rely on family members, even though they claim that they can be relied on, and all of this influences even though it doesn't really come under evidence-based practice (i15).

Interview participants provided a number of particular examples where they had knowingly made very specific practice decisions that went against the established evidence but were made because the closeness of the practice/community relationship made adherence to EBP too difficult an option to adopt. These examples included the use of a discredited surgical procedure, the unnecessary prescription of antibiotics, and continued use of a wound treatment that the evidence had discredited as ineffective. In essence, the data revealed that, in the remote context represented by HHS, the strength of community had a significant impact on the application of EBP.

The influence of community relationships on practice approaches was not limited to patient decisions by individual health practitioners. Local relationships were identified by all participants as

having a significant impact on community perceptions of their rights and responsibilities in relation to the health service. These relationships were also identified as influential in determining practice parameters within the health service—even to the point of vetoing service delivery modifications aimed at achieving best practice.

7.4.2 Community Shaping Practice Directions: Health Service Politicisation

All those involved in the management interviews (individual and team) raised the issue of community perception of ownership of the health service and the impact this has on the nature of service delivery at HHS. This was also reflected upon in individual interviews, with 13 of 14 health practitioners confirming that local residents identified very strongly with the health service as an integral part of their community. The general consensus through interview was that 'the view of the community has a huge impact and really directs the way things go in service delivery (c15)'. The key mechanism identified as 'directing' delivery was the political process. HHS is located in a marginal political seat with a parliamentary representative who has close affiliations with the local community—a situation characteristic of, but not unique to, this remote community.

All management staff and four out of 14 health practitioners made specific reference to health service politicisation. They identified that when there are likely to be health service changes to which the community is opposed, the political process is used to stop the adoption of these changes. Management staff identified this trend to use the political process to influence service delivery as having a flow-on effect in regard to the adoption of EBP and provided the following example of how this occurs.

Case Example 1: Health Service Politicisation (HHS)

Prior to commencement of data collection for this study, HHS had undergone a review of a particular treatment area with the result that a decision was made to close the service. This decision was made because service delivery was not meeting any of the risk criteria, the clinical practice criteria or the competency practice criteria identified, in the evidence, as being central to effective and safe delivery for this treatment area. The decision to close the treatment area was therefore based on an acknowledgment that it failed to meet standards or established evidence-based guidelines for service delivery, with the consequence that patient lives were being endangered during treatment. The community found that decision 'unpalatable (p15)' so used the political process to influence decision-making. The political influence exerted because of this community action meant that HHS management were instructed, by their funding body, to find a way of re-opening the service, even

though it was closed for very good clinical practice, evidence-based reasons.

> The thing that counters all of that (progress to using EBP) is the community and their perception and what they think they want, and we do get a lot of pressure in that way, not so much through the community themselves but the community and the political process. They go to the politicians and then they use the political process to go to the ministers through the department to force us to do something else… (in a metro area) if they want to do something different and fairly different for the right reasons they will go through with it. In a rural community - there are political influences and they may come to conclusions based on different ways that the political process has been used (o15).

A re-examination of the interconnectedness between HHS staff and the general community provides an insight into the degree of complexity of health service politicisation in the remote context. The health professionals who work in service delivery and the board members who manage the service have no capacity to separate themselves from the community that they service, unlike many of their urban and regional contemporaries. They are an integral part of the community. This creates an additional dimension to any change process involving EBP because either resistance or acceptance of change occurs simultaneously at both the organisational and at the community level. Importantly, it often involves many of the same people, families, and friends. Staff themselves stated that they used the political process to manage change.

Four of the 14 health practitioners interviewed argued that health service politicisation is a valuable tool and an integral aspect of service survival in a remote location: ‘The population is so small compared to the south west of the state. So thank god for representational parliaments - it makes a real difference if you’ve got political support’ (f13).

The interconnectedness intrinsic to remote practice has resulted, therefore, in HHS staff providing insider information for—and, in some instances, driving—health service politicisation. Conversely, the data has shown that the close links between HHS staff and community can inhibit those within the health service from driving a change agenda if it is considered to be unpopular. These individuals rely on the local community for social and familial support and are often reluctant to push for change—particularly the type of organisation-wide changes identified in a previous section of this chapter as being required for effective introduction of EBP across HHS. This situation was confirmed by all participants in the interview process and is summarised effectively in the following extract of interview:

> They (board of management and staff) have to live within the environment and so they have to have a lot of support because they might be making a decision for the health service that is unpopular within the community and they will be ostracised within the community and through the local member as well. So if the health service comes under strong media debate, like this one has in the not too distant past, then the board members (and staff) can become very uneasy because they feel that the community is indirectly criticising their decisions and that they are not working for the community. So living in a rural community is very different to living in a regional or a city because of community think …for them the community is also part of the broader family for them so it's very, very difficult (p15).

The degree of parochialism that typifies the HHS service context and results in community ownership of health service decision-making at HHS reveals an additional dimension when considered against the backdrop of the health service amalgamation and restructure discussed previously in this chapter. HHS, while structurally a single entity managed by a single chief executive officer and board of management, is tied geographically and historically to three separate local communities and responds to three sets of often diverse local community need. Therefore, to understand the ways in which community ownership of the health service impacts on uptake of EBP, it is necessary to consider the issue of community influence at a location-specific (micro) level as well as an organisation-wide (macro) level. This is particularly relevant as analysis of data highlights that community ownership of decision-making impacted on the adoption of EBP through both micro- and macro-level influences at HHS.

7.4.3 Parochialism, Community Ownership, and Health Service Silos

While HHS completed the formal amalgamation process in January 2001, analysis of interview data shows some discrepancy in perceptions around the extent to which HHS operated as a functional and cohesive amalgamated organisation. All management staff interviewed argued that many of the amalgamation issues were, at the time of data collection, being resolved and that there was 'a steady break down of the silo mentality and some recognition of shared organisational commonalities (m14)'. The consensus among this group was that the three campuses were beginning to work effectively as an amalgamated whole. This was not a view uniformly shared—ten of the 14 health practitioners interviewed argued that each of the campuses continued to operate as separate entities. These participants signalled this to be problematic in the adoption of an organisation-wide approach to EBP because it would be 'very difficult to ever standardise service delivery policies and protocols to the point where you can say all the campuses are homogenous' (b13).

This difficulty was linked very clearly to the parochialism of each of the site locations and the centrality of the health service to rural identity. As captured in the following quote, resistance to change is a direct result of a need to retain individual cultural characteristics and the perception that acceptance of change would compromise local identity:

> It's a very parochial town and because of the football club which is the other part (other than the health service) that the town's run on, why should we mix with you and …they are very separate; there's 3 campuses so you've not only got to do things 3 times but you have to do them in different ways. And you've got to do different things with each campus. You cannot do them the same; we look like we've got 2 heads if you suggest something different (q12).

Data collection sought to clarify the extent to which a general resistance to change could be seen as translating to a specific inhibiting factor in the use of EBP at HHS. Feedback from all participants, including management, was that there was a direct correlation between resistance to change, which was linked to a need to retain community identity, and the current failure to implement a uniform policy on EBP. The scope of this impact is captured effectively in the following quotes from management and from health practitioners on the issue of identity and EBP:

> We've become amalgamated, we've lost the local hospital and it's become part of this big entity down the road, and that's a huge cultural thing to overcome so if you have an evidence based approach that's been developed by [one of the other sites] and you try to implement it here, it might be rejected simply because of the politics of the situation, (e12) … they sort of kick up and they fight every little issue. You know if you want to change some documentation and when you change it and send it out for viewing, it comes back with 112 comments on it. I suppose it's almost a defensive thing. They still don't see themselves as part of the health service and there's been no real injection of new blood so they see themselves as you know fighting the tide of change (z15).

> If you were given these nice evidence based practice guidelines set up from [another area] and you brought it into a rural community well the local culture of the community might just knock it on the head to start with…The community has its own quirks and perks (c12).

These data highlight the extent to which, external to discipline and management-specific knowledge or agendas about the evidence-based paradigm, the nature of the remote community establishes dominant frameworks that influence and drive remote practice. It is critical to understand this context as the starting point in examining EBP and the HHS organisation.

The final idiosyncrasy specific to the remote context that was identified as shaping the practice environment and having a significant impact on the uptake of EBP, relates to the culture of the remote community in accessing health services. A notable theme to emerge in data collection was the prevalent trend, across the population using HHS services, to seek reactive rather than pro-active health treatments.

7.4.4 Rural Culture and Reactive Health Practice

All participants in the interview process acknowledged the rural culture around accessing health services as a significant influence on the adoption of current best practice by health practitioners, particularly in regard to preventative health. While the current evidence might promote, for example, modified diet and exercise regimes for improved population health, remote service users are less likely to adopt these regimes. Interview data supports findings on remote health that have identified curative treatment as the focus of the health system in rural and remote communities. The most prevalent demand is for acute and chronic disease management as opposed to primary care and health promotion (Dixon & Welch, 2000). The following statement is representative of this view and highlights the difficulties faced by practitioners regarding health practice:

> Because if you sort of said to someone, and; for example, this guy came over and said 'Well I saw you walking but I didn't think I'd join in' and I knew it was because he didn't want to be seen to doing something healthy…you are a little bit more busy, with rural life, rather than what goes on with your health (r12).

The minimal importance given to preventative health practice extends to the priority given to ensuring physical access to services by HHS service users. As will be explored, rural isolation is a major inhibitor to the application of EBP by the rural health practitioner. A proportion of the problem emerges from the remote mindset around health. In an extension of the view that health services should be accessed for curative rather than preventative need, HHS service users are often, by choice, isolated from service delivery.

> We have people that live say 30 km from town, they become aged, they can no longer drive and yet they flatly refuse to move. Services can't always get to them, we can't get to them as often as we would like and therefore they end up in very isolated positions, very poorly serviced …people basically refuse to move more convenient locations (q15).

In regard to application of EBP, this means HHS health practitioners were often unable to apply best practice guidelines, monitor progress adequately, or ensure access to suitable preventative or curative services. The nature of reactive practice is such that 10 of the 14 HHS health practitioners,

and all participants in the multi-disciplinary team, specifically identified it as an inhibitor to the adoption of EBP. Such practice limits the capacity to plan effectively and to develop structured approaches to health service delivery:

> Evidence based approaches, like really structured ones, we're saying you can't discount external factors in a rural environment and in our planning this (need to react to the specific situation) would be foremost rather than any evidence base; it's just how we do it (n14)

Reactive health practice, therefore, was (as with other idiosyncrasies specific to the remote context) influential in both service delivery and (through this) the extent to which practitioners adopted an evidence-based approach in health service delivery at the HHS site.

7.4.5 Rural Idiosyncrasies: Summary and Discussion

In the preceding subsection, the data provide previously unexamined insights into remote service delivery and EBP. Importantly, the data have allowed for the development of new and specific knowledge around the fact that there are aspects of remote practice which are sociobehavioural in nature and extremely difficult to quantify. Despite this, they remain instrumental in decision-making around the approaches adopted in remote practice. Specifically, the data highlights that—while important—it is not enough to examine discipline-specific factors (such as divergent levels of practitioner knowledge of and access to EBP) or organisational factors (such as philosophy, ethos, or levels of resourcing) if the scope of factors determining applicability and application of EBP in the remote context are to be understood. In essence, the data has shown that:

- The nature of community in the HHS remote location gave rise to high levels of role-blurring at the service delivery level. This meant practitioners were never 'off duty', and that expectations were placed on them in regard to the practitioner/patient relationship that were not placed on their urban and regional counterparts. These relationships have been explored extensively in the literature (Fuller et al. 2004; Green 2003; University of Newcastle 1999), but not in relation to EBP. Data from this study shows that increased blurring of professional boundaries resulted in additional pressure to modify and individualise service delivery to meet service user needs. These expectations have been found to make it more likely that service users' wishes will override the service delivery frameworks established by current evidence.

- Health services are considered to be a central part of remote communities (Doeksen & Schott 2003). Data verified this assessment for HHS, and marked that it was viewed as a service that belonged to the local community. This centrality, and the lack of infrastructure support intrinsic

to a remote location such as that serviced by HHS, meant that the political process became an important mechanism to manage change. Such politicisation of the health service meant that service delivery was shaped by the degree to which change was accepted within the local community. This influence extended to agency adoption of EBP. Any changes required to facilitate adoption of EBP were subject to the same scrutiny and control mechanisms as all other aspects of service delivery. The data reveal that, in environments with high levels of community ownership, there is external scrutiny that, in turn, shapes levels of uptake.

- Despite an amalgamation process, HHS was a fragmented service. Service delivery occurred across three sites separated by geography, a diverse history, and discrete community cultures and expectations regarding health service ownership and service outcomes. This had led to a 'silo' mentality that made the adoption of uniform, agency-wide policies and procedures difficult. These data, therefore, highlight the additional complexities inherent to applying EBP in environments in which there is service fragmentation typified by geographic isolation and cultural difference.

- In line with existing research knowledge (Dixon & Welch 2000), health service usage at HHS was found to be for curative rather than preventative purposes. The general community approach to health service access was identified as a minimalist one. These data reinforce the difficulties encountered by health practitioners in remote locations in using the current best evidence to improve population health status and encourage health promotion. Applying EBP is encumbered by a culture of reactive health practice and a general resistance to the adoption of preventative health regimes.

Having established the importance of both organisational and location context in any assessment of the applicability of EBP to the remote practice environment as it pertains to HHS, it is now important to consider EBP from the specific perspective of the HHS health practitioner.

7.5 REMOTE SERVICE PROVISION FRAMEWORKS

The following section moves away from contextual analysis and provides a detailed description and examination of the frameworks driving service delivery at HHS, as a remote service site. It explores issues specific to remote service provision and staffing and reflects on the ways these issues impact on the applicability and uptake of EBP. Having established, so far, the external factors influencing EBP at the HHS site, the starting point for an analysis of the discipline-specific factors is in an assessment of the degree of knowledge and understanding of EBP by HHS health practitioners.

7.5.1 Knowledge and Use of EBP

An analysis of questionnaire data on HHS practitioner knowledge of the EBP concept, outlined in Table 40, identifies that all practitioners had some understanding of the concept, with the majority of disciplines scoring consistently in the medium range. Of the 19 HHS respondents, only three rated 'high', and two rated 'low'. The 'medium' level rated by medicine and physiotherapy went against trends identified in previous study findings that documented higher levels of knowledge of EBP among scientific disciplines (Cochrane 1999; Dawes et al. 1999; Ferlie et al. 1999; Sackett et al. 1996). The reasons for these differences will be explored later in this section.

Table 40: HHS practitioner knowledge of EBP

HEALTH DISCIPLINE	Total n	Low n	Medium n	High n
Medicine	2		2	
Nursing	11	2	8	1
Social Work	1		1	
Physiotherapy	2		2	
Occupational Therapy	2			2
Diversional Therapy	1		1	

The interview data relating to practitioner knowledge of EBP revealed significantly different results to those from the questionnaire. Eight of the 14 health practitioners interviewed identified that they had very limited understanding of the notion of EBP. This was particularly true of the nurses. Seven of the nine nurses interviewed identified that they had limited knowledge of EBP and the process for using structured evidence in practice. Examples of this are found in statements such as, 'I've talked to different ones, you know, and they said "I don't know what you mean, I really don't", and I thought, well, they are fairly bright' (s12). Nurses interviewed identified that the low knowledge of EBP at HHS was closely linked to the fact that the majority of nurses at HHS were trained in a hospital rather than a tertiary setting and that training in the evidence-based model was absent in their initial formal training. As nursing was the main discipline operating out of HHS, this was seen to have a significant impact on the adoption of EBP. The following extract of interview, which is representative of assessments made by the majority of nurses interviewed (6 of 9), highlights the link between training and EBP:

> Yeah, I do (think that being hospital trained makes people less able to use EBP) I think a lot of people trained in hospitals, they're unaware that there's been so much research done because they're not reading these articles all the time that tell you that this study's been done and that study's been done (s15).

While a discrepancy existed between quantitative and qualitative data when assessing a general knowledge of the notion of EBP, this disappeared when practitioners were asked to show their knowledge by listing specific types of evidence. In line with interview results, when HHS practitioners were required to reflect on specific components of EBP (such as the NH&MRC hierarchy of evidence), the results indicated a limited knowledge of the specifics of EBP.

As shown in Table 41, which presents the questionnaire data on knowledge of the evidence hierarchy, only three of the 19 respondents rated their knowledge of the evidence hierarchy as high. Of the remaining 16, 11 identified that they had no knowledge of the hierarchy of evidence. This was reinforced in interview data where only three of the 14 health practitioners referred to evidence types specific to the hierarchy of evidence (such as clinical trials, systematic reviews, or even case study evidence). The remaining 11 interviewees provided descriptions of evidence types that focused on mechanisms such as 'client feedback sheets' (t15), 'policy and procedure manuals' (u15), and 'supervisor feedback'(v15).

Table 41: Knowledge of the Evidence Hierarchy (HHS)

HEALTH DISCIPLINE	Total n	No Knowledge n	Medium Level Knowledge n	High Level Knowledge n
Medicine	2	1		1
Nursing	11	8	3	
Social Work	1	1		
Physiotherapy	2		1	1
Occupational Therapy	2		1	1
Diversional Therapy	1	1		

As part of the process of assessing knowledge and use of EBP, the questionnaire also sought to clarify HHS practitioner understanding of EBP (rather than just whether they knew about it) and how skilled they believed themselves to be in the practical aspects of using evidence to inform practice. The results, presented in Table 42, show that of the 19 questionnaire participants, 9 rated their understanding of EBP as low, and only five rated their understanding as high. This reflects interview data in which a majority (8 of 14) of practitioners identified that they had limited understanding of EBP. This assessment is captured by management statements that 'the disciplines here don't have a lot of understanding of evidence-based practice (w15).

Table 42: Understanding of the concept of EBP (HHS)

HEALTH DISCIPLINE	Low	Medium	High

	Total n	n	n	n
Medicine	2	1		1
Nursing	11	6	2	3
Social Work	1		1	
Physiotherapy	2		1	1
Occupational Therapy	2	1	1	
Diversional Therapy	1	1		

HHS practitioner skill level in accessing and applying evidence to practice was tested exclusively through questionnaire data, with results confirming that HHS practitioners rated themselves as having limited skills in the practicalities of finding and applying evidence in the practice setting.

Table 43 details the results for this variable, with only three of 19 questionnaire participants rating their application skill level as high. Written feedback also identified this as an area in which practitioners believed they needed support.

Table 43: HHS practitioner skill level – skills relevant to EBP

HEALTH DISCIPLINE	Total n	Low n	Medium n	High n
Medicine	2	1	1	
Nursing	11	6	4	1
Social Work	1		1	
Physiotherapy	2		1	1
Occupational Therapy	2	2		
Diversional Therapy	1			1

The final questionnaire variable used to test practitioner knowledge of EBP required practitioners to self-assess their knowledge of the availability of evidence specific to their own discipline area. The results, detailed in Table 44, indicate that 13 of the 19 practitioners rated their knowledge of the evidence available to inform practice as low to medium, and a minority (six) rated their knowledge of evidence availability as high.

Table 44: Knowledge of availability of evidence in own discipline area (HHS)

HEALTH DISCIPLINE	Total n	Low n	Medium n	High n
Medicine	2	1		1

Nursing	11	5	3	3
Social Work	1	1		
Physiotherapy	2		1	1
Occupational Therapy	2	1	1	
Diversional Therapy	1			1

In summary, analysis of both questionnaire and interview data from HHS identifies a variable level of knowledge and understanding of EBP, with a majority of practitioners assessing their knowledge of the specifics of the evidence-based paradigm to be limited. Therefore, HHS practitioners, already operating in a practice environment in which contextual factors dissuade the adoption of EBP, were hindered further by a low level of knowledge of the paradigm.

Questionnaire and interview data were also analysed to assess the extent to which low levels of knowledge and skill impacted on actual levels of usage of EBP at the HHS site.

Questionnaire results on usage levels, presented in Table 45, show that, despite HHS staff identifying low levels of knowledge of the paradigm, only three of the 19 questionnaire respondents listed themselves to be non-users of evidence.

Table 45: Frequency of use of evidence to inform practice (HHS)

HEALTH DISCIPLINE	**Total n**	**Non Users n**	**Infrequent Users n**	**Frequent Users n**
Medicine	2		1	1
Nursing	11	2		9
Social Work	1	1		
Physiotherapy	2			2
Occupational Therapy	2		2	
Diversional Therapy	1		1	

This finding appears to be at variance with previous results in that low levels of knowledge of the specifics of EBP should, logically, translate to a low level of its usage. It is also at variance with the interview finding that a majority (10 of 14) of practitioners identified that evidence usage is not high in the HHS practice setting:

> No not in the practical, not my experience…In my experience in day to day basis it's not and there's often a large gap between, between theory and you know and actual practice, rightly or wrongly (w12).

However the type of evidence used varied among practitioners. While all physiotherapy practitioners and nine of the 11 nursing staff self-rated as frequent users of evidence, questionnaire results provide no insights into whether they were using the same type of evidence to inform their practice. The interview data provides some clarification on this issue and reinforces that few HHS practitioners used structured evidence to inform clinical decision-making. When interview participants were asked to identify the type of evidence they used to inform practice, the majority (10 of 14) identified that their evidence was 'mainly practical and from experience' (d14) rather than any formal structured evidence base. The following is representative of the variation between interview and questionnaire data. In it, the health practitioner makes a clear statement on low use and understanding of EBP, yet in the questionnaire rates their use of evidence in the medium range:

> Well in the last 20 years I probably have never used it, other than my work experience…I haven't really gone out and tried to find the evidence; it's just through what I've learnt and what I do (e14) .

The reference made in this statement to length of practice captures the essence of one of the key influences on use of EBP in the HHS remote context. An exploration of this key influence is revelatory of why knowledge and uptake of EBP were low at HHS: the ageing workforce profile.

7.5.2 The Ageing Workforce Profile and EBP

Questionnaire data on workforce profile shows that, at the time of data collection, 15 of the 19 health practitioners involved in this aspect of the study had practiced for 10 years or more, and nine of these 15 had practiced for between 20 and 35 years. Of the remaining four, only two had been in the workforce for less than four years.

The qualitative data gathered through the interview process also reinforced that HHS has an ageing workforce profile, and interview participants identified that this workforce profile acted as a major inhibitor to uptake of EBP at the HHS site. All management staff interviewed, and eight health practitioners specifically referred to the ageing workforce as an influence on the uptake of EBP and argued that this impacted in a number of ways.

In the first instance, feedback highlighted the difficulties inherent to introducing a new concept such as EBP when the majority of practitioners had been operating in a particular way for a long time. Interestingly, interview participants adopted differing views on the merits of change, with these being closely linked to their own work profile. Management staff and four health practitioners (two

practicing for less than five years, and two in new roles with an administrative focus for less than five years) argued that the age of HHS health practitioners made it very difficult to implement EBP.

These participants also argued that there was a need to change perceptions around EBP if improved health outcomes were to be achieved. The remainder of those interviewed—part of the ageing workforce themselves—identified the ageing workforce as influential, but remained unconvinced of the value of changing practice to adhere to EBP requirements (as in the following quote):

> You have people that've been in areas for a very long time with no evidence based culture and suddenly can't see why you need to adopt that when, as far as they're concerned, and they're probably quite correct, things have gone on reasonably smoothly for a long time. You know if it ain't broke why are we trying to fix it? And it's a very hard argument to counter (v14).

Closely linked to this resistance to changing established practice was the question of practitioner motivation for change. Interview feedback from management staff and five of the fourteen health practitioners identified that staff were less motivated to embrace change as they moved closer to retirement. This was cited specifically as influencing 'stopping the adoption of EBP' (p13). Management perceptions of the ways in which an ageing workforce moving closer to retirement affects EBP uptake is captured effectively in the following statement from a management staff member:

> We've got quite a few older people that are now able to say 'look I don't want to do this because I'm retiring in 2 years or 3 years so I won't re-register in this area, I'll just let it go' and we're allowing them to do that because that can allow a better knowledge about where we are in the organisation as far as our capacity and our locating where we have to literally up-skill people to these competencies [for implementing EBP] (u14).

The provision of organisational support for staff training in EBP was considered to be made more difficult due to the ageing workforce. Feedback from management suggests that the level of indifference about skill development is closely linked to age profile, and that an ageing workforce was 'disinterested in anything other than coming to work and getting their pay and lacking the initiative to go and do further education (p13)'. There was consensus from participants that practitioners close to retirement were less likely to seek training in EBP. In a location where a significant number of staff are working toward retirement, this hinders the adoption of EBP.

It is important to point out that the issue of staff not seeking to undertake further education was also strongly linked to the rural context and the limitations placed on practitioners by their geographical isolation from training facilities. While this was compounded by the fact that many HHS

practitioners had practiced at the same location for an extended period, it cannot be attributed solely to the age profile of the workforce. It was also due to a tendency ‘particularly in isolated, rural areas to let those educational competencies, not slip, but not develop because of the environment that we’re actually living in’ (g16). The question of the different ways and extent that location influences competency development for EBP will be explored in detail later in this chapter.

Acknowledging the pivotal role of the remote context as an influence on EBP uptake does not diminish the influence of the workforce profile. The following case example presents an HHS practitioner’s perspective of the impact of an ageing workforce with limited ongoing skills training.

Case Example 2: A HHS Health Practitioner's Story (w14)

Martin is a HHS practitioner who has worked at the same location for over 50 years. He readily acknowledged that he had no training around EBP in his early years. He also indicated that, from the time he qualified in the 1950s until the late 1980s, there was no professional requirement or expectation for ongoing professional education. In the 1980s it became mandatory that a minimum amount of training be undertaken each year. Martin has made the decision to undertake training on a yearly basis to meet this requirement. He believes that this has been extremely helpful to him and has helped him to realise a number of key issues relating to an ageing workforce, the remote context, and achieving the best outcomes for service users. These are:

- There are few professionals willing to work in remote locations. Therefore, there is a strong reliance on those already working in the area. This is problematic when older practitioners make the decision not to update their skills, despite mandatory requirements. Staff shortages mean that health organisations, communities, and bureaucracies are prepared to overlook training shortfalls in preference to having a professional available to service local need. Martin was concerned that this has an impact on the quality of service provided to individuals in remote locations.
- As a practitioner currently undertaking some ongoing training, Martin is aware that having had 40 years with no ongoing education is problematic. Despite recent learnings, he believes he missed out on some fundamental knowledge that would have given him insights into treatment changes and a greater understanding of contemporary best practice approaches.
- The trend in remote locations is for older professionals to avoid ongoing training to the disadvantage of service users. He provided examples of questioning incorrect prescribing by professionals who had chosen not to undertake ongoing training.

As identified in this case example, countering an ageing workforce profile is made more difficult by the limited capacity to attract new staff to HHS's remote location. Interview participants depicted the remote context as disadvantageous because it led to a limited throughput of new practitioners with knowledge of new approaches, including EBP. The link between an ageing workplace profile, limited access to new staff, the remote context, and the uptake of EBP is consolidated in the following quote from a nurse at HHS:

> A lot of people stay in their one job for 50 years and therefore 'Why should we have evidence now?' is the question they often ask. Whereas if you're in the major metropolitan areas it's easier because people turn over and they want to keep going and want to keep educating, whereas here, you know you're a bit more tied to community and things like that (m12) .

Management at HHS argued that its workforce had been isolated for too long and that this was a major 'impediment (y13)' in achieving an evidence-based approach. Organisationally, this presented a challenge:

> To attract younger people who are fresh and well skilled in new ways of doing things and yet are still keen to learn, to improve, to our area. It is the very easiest way for evidence based practice to come in is when new people come to your organisation will usually start questioning 'Why aren't you doing it this way? The new way of doing things is this.' … We don't get them. Or we get 1, maybe 2 if we're lucky and they are not going to be brave enough to take a lead role of course. They are overwhelmed by everything else. And so take the lead role from the 'wiser' and more experienced practitioners so it is harder for them to raise change (y13).

Interview feedback consistently linked successful implementation of new models of practice to organisational capacity to recruit and retain health practitioners to meet health delivery needs. Consequently, it is important to explore this theme further in order to understand the specific ways in which it shapes adoption of EBP.

7.5.3 Recruitment and Retention and EBP

A plethora of contemporary studies—including Hegney (1998a), Humphreys et al. (2002), Kenny and Duckett (2002) and Parsons et al. (2003)—have identified recruitment and retention as a major worldwide health service delivery issue facing rural and remote communities. This study does not seek to test these findings but merely to note that HHS as a remote service organisation faced similar recruitment and retention problems to those already documented extensively in the literature.

This study does, however, seek to understand the ways in which recruitment and retention might have influenced the adoption and applicability of EBP at the HHS study site. Analysis of the interview data shows that recruitment and retention impact on EBP in a number of specific ways. As identified previously, the time spent by management staff on the implementation of a recruitment and retention strategy limited (in a general way) the time available and the priority given to the development of an organisational agenda on EBP. More specifically, and also as previously discussed, the inability to recruit new staff into the organisation was noted as an inhibitor

to the development of an organisational culture characterised by a practitioner-driven agenda around EBP. The final issue identified as playing a role in determining EBP adoption relates to the staff shortages created by an inability to recruit and retain staff at this study site.

Staff shortages at HHS resulted in a reliance on short-term staff from regional and metropolitan nursing agency pools and a requirement for staff to adopt multiple roles to meet service delivery needs—both calculated to be influential in the uptake of EBP.

In regard to the use of agency staff, all management and all nursing interview participants raised this as having an impact. HHS participants assessed that temporary staff were less likely to introduce change or to promote a change agenda in regard to EBP. Agency staff were employed on a short-term basis and, although longer term rotations had been offered, it remained difficult to get agency staff to remain in a remote area for extended blocks of work (c14). The reliance on transient agency staff made the introduction of an organisational agenda on EBP more difficult. This is because of the nature of this type of work structure and also because temporary staff have limited capacity, as staff paid to undertake specific tasks, to be involved in promoting and resourcing an ongoing change process. Linked to this is the fact that, despite an acknowledgment that newer graduates had valuable insights to bring to the work context around EBP, long-term (permanent) HHS staff were less likely to take up suggestions made by short-term agency staff. As identified by interview feedback, these practitioners were not really considered to be part of the organisation but rather individuals who came in to ‘do short runs (c14)’.

The following statement by senior nursing staff on resistance to a change introduced by a short-term staff member captures the scope of this recruitment and retention issue:

> We had an agency person came in and redid (a nursing process) which was very good but…there was poor communication and it never got discussed across the big picture of all the staff and the guy who did it was only here for 3 nights and never been back again. Some of the staff around that time were DIV 2's, they picked up how to do it and then when our DIV 1's came back you know, there were problems; to be honest, we still haven't resolved that (c14).

Also arising from the inability to recruit and retain staff at the HHS site was the associated requirement that HHS health practitioners adopt multiple roles due to staff shortages. In such instances, staff often had to work extended hours and across a number of service delivery areas. All practitioners interviewed identified that this situation limited their capacity to specialise and to allocate time to implementing EBP. The extent to which this shaped the use of evidence in practice

at HHS is outlined in the following quote referring to the impact of staff shortages on the uptake of EBP:

> People are often working very long hours at just keeping the place running so the time to actually look into or formulate or gather evidence for evidence based practice is very, very limited… because people are working so hard, evidence based practice gets prioritised and it's prioritised a long way down the line (d16).

In an environment in which chronic staff shortages are coupled with a small workforce structure, even one individual taking the time to seek out and develop EBP can mean that in that program area 'you've actually lost 50% of your staff (b14)'. This can cause staff to feel 'overworked and overwhelmed (b14)' and to resist implementing a paradigm such as EBP as it is seen as representing extra work.

The extent to which staff shortages impact on service delivery, and through this, on the uptake of EBP, is made more complex by the unique context of rural practice.

7.5.4 Rural Workplace Expectations: Interlocked Health and Social Issues

Twelve of the 14 health practitioners interviewed argued that service delivery in the rural context varies from urban practice significantly and is shaped by a number of factors exclusive to rurality. These include the geographic isolation of service users; the fact that health practitioners have a personal knowledge of, and links to, the lives of service users; and, the expectations of the local community around the nature of health service delivery. These factors create a service delivery environment that, in addition to shaping decision-making in the ways explored earlier, also places increased workload demands on the rural practitioner. Consequently, these factors were assessed as inhibiting practitioner capacity to adopt EBP.

The following quotes from HHS practitioners map the nature of these rural workplace expectations and highlight their impact on service delivery time, and the role of the remote practitioner:

> We do lots of things we shouldn't do like shopping for the clients…you've got to get it for them or how else do they get it?…You have to do it. You can't say 'No, I'm sorry, that's not our job'. You just do it. I put out a rubbish bin for a lady every morning because she's too tottery…just little things that take 5 minutes but it adds up to a lot of 5 minutes (l13).

> It could be that you're climbing up a tree, you know look at birds with the client and you are keeping them happy and keeping them healthy for the next week because you know (that's what they need) (a12).

Accepting that community expectations place additional demands on the time of the remote health practitioner, clarification was sought during interview on whether the time factor involved in providing diverse, non-health-specific support during service delivery was the only deterrent to the use of EBP in the remote context. Feedback showed that the majority of HHS health practitioners believed that the relevance of EBP diminished due to the fluidity and diversity of remote practice.

Twelve of the 14 fourteen health practitioners argued that their work was multi-roled, very generalist in nature, and focused on responding to needs not commonly present in urban environments. This is because urban environments have access to non-health service-specific supports such as home help and meals on wheels (both of which are very limited in the HHS locations). Urban locations also have a close proximity to utilities and service infrastructure. These differences were identified as particularly pertinent to EBP given that this paradigm was developed in the urban centres in which these facilities are available. The essence of this view is captured in the following extract around the place of EBP in responding to the needs of the isolated remote service user:

> I get there one day and he's hit the wrong button on the remote control and he's totally untuned his TV. So I spend an hour with a book trying to retune his television because this was the man's life…So I mean I don't think that probably comes quite in under evidence based practice anywhere but it's critical (to life and health in the remote setting) …for the clinical points of things yes evidence based practice is certainly a great benefit but community nursing is fairly fluid and things that we face here in the country would be totally different to what you would face in the city and again to what you would face in perhaps a larger metropolitan town (b15) .

This feedback signalled an issue pivotal to this thesis: the different roles of urban and rural practitioners and the ways in which these differences determine the place of EBP in the remote context. Interview feedback found these differences to be significant and instrumental in understanding the divergence between urban policy and remote practice in relation to EBP. Consequently, the following subsections present these findings and discuss the ways in which they impact on the use of EBP in the remote context.

7.5.5 Multi-Roled, Discipline-Based Generalists

All participants in the interview process raised the fact that the workplace demands of remote practice meant they were regularly working across multiple areas in order to meet service needs. Additionally, a majority of 13 of these practitioners directly linked the low level of uptake of EBP to these multiple roles, stating that 'it would be easier for me to use evidence base if I only did one

job but I do 5 jobs…I'm running (k13)'. Practitioners identified that remote practice made it difficult to focus their work practices in one particular area or to develop expertise in particular treatment modalities. The HHS remote practitioners, in all interviews, labelled themselves as 'generalists'. The lack of infrastructure and the minimal number of support staff meant that HHS practitioners were often required to undertake a series of jobs, each with diverse requirements and consequently they became a 'jack of all trades and master of none (x12)'. This resulted in the development of a different perspective of EBP. While there was interest in the paradigm, there was a different focus and mindset in how practitioners approach service delivery:

> I think there is an interest in evidence based too, but they (practitioners) tend to be generalists… the staff are, across the board, generalists, having to have those specific specialist type knowledge but it's intertwined with the generalist point of view (h15).

This is a fundamental difference to urban practice, where disciplines have an increased capacity for specialisation—whether it is the physiotherapist who works exclusively in paediatrics, or the nurse working in intensive care. As summarised in these following interview extracts from a nurse and an allied health professional, specialisation is not an option for the remote service practitioner:

> That is a reason why evidence based practice is quite difficult in a rural area - particularly for nursing staff, you have so many roles, you need to know everything about everything. It's not, you know, working in ICU, it's not working in A and E, it's not working in theatre, basically these nurses are doing the lot together (m14) .

> As an [discipline area] here you never know what's going to come through the door as a client. I don't specialise in anything here because you can't. You're expected to know everything about everything (p14) .

This was identified as a major barrier to the adoption of EBP because the scope of service delivery made it impossible to gather knowledge on all treatment areas, particularly given the workload demands of remote practice. At HHS, nurses, in particular, identified that they were expected to undertake general duties that encompassed a broad range of nursing duties (thereby limiting the capacity to specialise) but also tasks that, in an urban or regional environment, would not be undertaken by their discipline area. The ways in which these requirements for generalist practice impact on the use of EBP are outlined in the following quote from a HHS nurse:

> It's a distraction to find time putting the linen away or something. It's time that perhaps you could have spent having at the internet or reading a journal, perhaps assessing patients in a more thorough manner whereas we're doing all sorts of things; picking up trays and all sorts of things

> that I couldn't believe when I first got here (laugh). So I think EBP would have a better chance if we just concentrated on nursing duties as a priority but the practicalities of it are that the work has to be done by someone (l14) .

In essence, the current framework of EBP—with a focus on treatments for individual conditions—was assessed by all interview participants as failing to be responsive to a rural context in which the practitioner is required to adopt multiple roles and practice as a generalist, with limited capacity to specialise and develop a pool of evidence based knowledge on individual treatment areas.

Additionally, HHS practitioners also were firm in their assessments that the development of current best evidence occurs within urban locations and, as such, lacks transferability to the remote context due to the very significant differences between rural and urban practice. These differentials are outlined in the following subsection.

7.5.6 Differentials: Metropolitan, Regional, and Remote

The extent to which currently available evidence was assessed as being relevant and responsive to the needs of the rural practitioner was tested through both quantitative and qualitative data. HHS questionnaire respondents were asked to assess if they believed available evidence was of a quality to meet the needs of their discipline in their practice context. As outlined in Table 46, only five (of 19) questionnaire participants believed that the available evidence was of a high quality, while the majority (14) across all discipline areas believed that the quality of such evidence was poor.

Table 46: Availability of high quality discipline specific evidence (HHS)

HEALTH DISCIPLINE	Total n	Poor n	Good n
Medicine	2	1	1
Nursing	11	8	3
Social Work	1	1	
Physiotherapy	2	1	1
Occupational Therapy	2	2	
Diversional Therapy	1	1	

This view was linked specifically to the failure of the currently available evidence base to be responsive to remote practice. Written questionnaire responses included statements such as 'evidence developed for metropolitan areas—no good for us', 'current evidence is useless in regard to community nursing', and 'rural areas and individual client requirements are too diverse for

structured evidence', which indicates the extent to which HHS practitioners believed that available evidence was inadequate to meet their service delivery needs.

This assessment of how practitioners view existing evidence pools is strongly supported by the interview data in which all health practitioners identified the limitations of current evidence in responding to the issues that are specific to rural practice. The following quotes capture effectively the consensus among HHS health practitioners that current evidence-based guidelines assume the service delivery context is comparable to the one in which evidence has been developed. As this context is generally an urban one, the evidence has been found to lack transferability across practice environments:

> You couldn't translate what they're doing CCU at Royal Melbourne to here because there's different issues and facilities…I don't think you could translate what's say happening in a larger centre or you know into a particular area, you'd have to be specific to this type of hospital and type of health care (y12)

> If you call somewhere in Adelaide they'll say do this, this and this, and think that's fine because that's your evidence but you can't implement it in the country because you haven't got that resource like your burns unit, um, you know, you have to sort of shoot them in and out as quick as you can, so therefore you mess up your evidence. You know that you've got to keep them cool and everything like that, but as for the way we're going to treat them, you know they've got 3½, 4 hours till they get to the major hospital, and so try and use that evidence that they can use and apply in the city is not feasible in country locations (n12) .

It is important to point out that the perceptions of HHS health practitioners that current evidence was not transferable to the remote context was not limited to an assessment that there were differences between remote and urban practice needs. The issue (raised by 10 of the 14 practitioners) that the notion of rural/metropolitan differentials was viewed as much more complex than a simple mismatch between two vastly different contexts such as small country and large city. These practitioners specifically identified that differentials extended to variations between regional and remote practice, and highlighted the fact that centrally based funding bodies lacked an understanding that fundamental differences exist between diverse rural contexts. These views are represented in the following statements, with one highlighting location differences and variations in evidence needs, the other discussing the shortfalls of training that is provided in a regional setting, but assumes a level of access to resources that is not a reality in the remote context:

> You can't apply the evidence that works in a place like Bendigo or Ballarat to these areas, not without careful consideration because they're just totally different kettles of fish. I mean they're closer and I know a lot of people in Melbourne have problems with this because some people haven't even gone past metropolitan Melbourne, they think that Ballarat, Bendigo is the rural area and in some respects they are but really they function as a larger city hospital would and there's important differences (c13) .

> Training in a major centre rather than a rural, remote area, you get to sit through listening to nurses demonstrate the theatre technique and begin by saying, 'don't go past X-ray'. Well we haven't got an X ray so it becomes less applicable (y14)

All interview participants across all discipline areas argued that this situation constantly required them to develop alternatives to those recommended in the available evidence. Practitioners identified that, right from the outset of service provision, the nature of the treatment often, of necessity, varied from the evidence recommendations. To illustrate these differentials, the example was given of ambulance services. Where the evidence might recommend a specific response time, geographic isolation (and the use of relief drivers unfamiliar with the area) resulted in significantly increased response times. The resources available to the ambulance driver also often limited the nature of the treatment provided during the critical initial stages. In these instances, the evidence transferability was compromised from the outset. Overall, there was a general acknowledgment from all interview participants that, due to remote differences, the remote health professional is unable to adopt evidence as presented and often has to put 'other things in place (o13)'.

7.5.7 Guidelines: Localisation and Scarcity

Despite the acknowledgment that existing clinical practice guidelines promoting EBP were often incompatible with the reality of remote practice, eight of the 14 practitioners interviewed identified that the guidelines did provide a reasonable 'base from which to develop' (b12) practice decisions, and that they held some value for practice by providing a broad 'guideline that the staff have to follow (and generally do) (o13).'

Questionnaire data, as outlined in Table 47, identified that a majority (10 of 19) of health practitioners stated that they had used clinical practice guidelines to inform their practice. In regard to this variable, the allied health disciplines at HHS rated particularly well: all practitioners in the areas of physiotherapy, occupational therapy, and diversional therapy identified that they had used clinical practice guidelines during service delivery.

Table 47: HHS practitioner use of clinical practice guidelines

HEALTH DISCIPLINE	Total n	Used Guidelines n
Medicine	2	1
Nursing	11	4
Social Work	1	-
Physiotherapy	2	2
Occupational Therapy	2	2
Diversional Therapy	1	1

The accuracy of these results are questionable when compared with interview data. These data show a level of variation in practitioner understanding of the term 'clinical practice guidelines'. Of the 14 health practitioners interviewed, only five defined guidelines in line with literature definitions (Shorten & Wallace, 1997; Weller & Veale, 1999; Howard & Jenson, 1999; Hemmings, 2000) with the remainder including 'policy and procedure' (n13), 'organisational standards' (v13), and 'ward practice'(s14) in their definitions. Acknowledging this variation in practitioner understanding of the term, feedback received during the interview process identified a consistently high level of dissatisfaction with existing 'clinical practice guidelines' with all health practitioner participants believing that, to be effective, guidelines should be modified to meet local need. These practitioners also argued that, without modification, guidelines lack relevance for the rural context (s14), and that, as a consequence, EBP lacks transferability and applicability to remote practice.

The extent to which practitioners had been involved in the development of localised guidelines was assessed statistically through questionnaire responses. The results, as outlined in Table 48, show that only seven (of 19) participants had been involved in the development of customised guidelines. This result was mirrored during interview, where only three (of 14) participants reported any involvement in the development of guidelines. Given the previous argument that localised guidelines are fundamental to having responsive and relevant evidence-based frameworks in place in the remote context, this result suggests a limited capacity for adoption of EBP at the HHS site. It is important to highlight that the inhibiting factor to the development of localised guidelines was identified by all participants as time and resource availability rather than a resistance to the implementation of an evidence-based practice culture.

Table 48: Involvement in the development of clinical practice guidelines (HHS)

HEALTH DISCIPLINE	Total n	No n	Yes n
Medicine	2	1	1
Nursing	11	8	3
Social Work	1	1	
Physiotherapy	2		2
Occupational Therapy	2	2	
Diversional Therapy	1		1

The data on the remote service provision frameworks shaping the HHS site, therefore, depicts an understaffed workforce structure; practitioners operating across multiple roles with minimal capacity to specialise or allocate time to accessing evidence; and an available evidence base that is unresponsive to the remote context.

The final, discipline-specific service delivery issue to be explored in relation to EBP focuses on the extent to which health practitioners at HHS—given the generalist, multi-roled nature of their practice—were professionally isolated, and what impact this had on the adoption of EBP. Linked to this is the question of whether HHS practitioners worked within multi-disciplinary teams and what role EBP played in any multi-disciplinary work undertaken at the HHS site.

7.5.8 Solo Practitioners, Professional Isolation, and the Multi-Disciplinary Team

The issue of professional identity and how it is affected by the professional isolation of the HHS practitioner was explored during the interview process through an examination of participant perceptions of the professional practice models that define their discipline area.

All HHS practitioners referred at various stages of the interview process to the unique aspects of their discipline area and the ways these factors defined them professionally. They also highlighted the importance of discipline-specific peer support in the maintenance of professional identity. The number of nursing staff at HHS meant that this discipline had the capacity to achieve a level of collegiate sharing that was not extended to other discipline areas—albeit that a majority of HHS staff, regardless of discipline type, operated as sole practitioners for a large proportion of their delivery time. Of the non-nursing disciplines interviewed at HHS (five of 14 practitioners), all identified the impact of a limited capacity for professional networking. The following quote provides some valuable insights into the impact of this isolation on the professional identity of the HHS health practitioner:

> I make the most of every visit from workers from an external service, I make sure I have coffee or make sure I have lunch just so that we can talk in our own jargon because the nurses have that every day of the week, they can talk in their own language so to speak and even though we are a team, there is that isolation - of course I'm going to look at a situation differently, to someone trained under [a different model] (z14).

What impact, then, did this level of professional isolation have on the adoption of EBP at the HHS study site? All 14 health practitioners interviewed at HHS identified that the professional isolation inherent to remote practice was instrumental in decreasing practitioner capacity to adopt EBP.

Practitioners at HHS, particularly those from disciplines other than nursing, had very limited access to peers from the same discipline area. This made it difficult to discuss treatment approaches, review available evidence, or thrash out options for modification of existing guidelines to respond to local need. The capacity to do these things was highlighted by study participants as an important part of incorporating evidence into practice. The absence of these options resulted in practitioners being discouraged from seeking evidence, particularly when the mechanisms available to them generally involved negotiation and consultations with unknown colleagues in distant locations:

> If you do need the evidence, there's no one on site and you know that the closest person you need to help with something's going to be 3 hours, you're looking at Ballarat… And failing that you're going to Adelaide or Melbourne and it's a very big thing to have to seek that help and that support from someone that might know and often if you've got to ring up the Austin, you chase around 10, 15 different phone calls prior to getting to the person that you need (p12) .

The absence of a capacity to develop evidence-based skills in treatment provision through access to collegiate sharing in the workplace was an issue raised by all study participants at HHS. Health practitioners argued that, while the internet is an effective mechanism to learn new skills, practitioners felt a level of disassociation from this resource when it was the only option available. They believed that there would be an increased opportunity to develop professional skills in the use and application of EBP if there was a greater opportunity for regular interactive contact with peers:

> I think the internet has helped a lot in that respect but there's nothing better than just hearing a good practitioner talk about their specialty area (y14).

These data provide some insights into the impact of professional isolation on the adoption of discipline-based EBP. Also highlighted is the fact that HHS remote practitioners—unlike many of their urban counterparts—were largely dependent for professional support on individuals from a broad range of program and discipline areas: those that comprised the HHS workplace team.

All participants interviewed across all discipline areas stated that teamwork was pivotal to effective service delivery in a remote location, with the consensus of practitioners involved in the multi-disciplinary team interview being that ‘you would fall apart in a rural area if you didn’t work as a team (j14)’.

Given this assessment, what role did EBP play in this team context, particularly evidence specific to multi-disciplinary practice? Feedback from all health practitioner interviews indicated that, while working in a team was valuable for providing an opportunity for collegiate support and consultation on individual patient need, disciplines boundaries were maintained strongly. Practitioners identified that there was not a great deal of ‘sharing of information as far as evidence-based practice goes (j14)’. Further, no health practitioner reported having used, or developed, evidence-based guidelines for multi-disciplinary practice.

It is the assessment of this researcher that the absence of evidence frameworks through which to inform multi-disciplinary practice at the HHS site was due to three key factors.

The first related to the fact that HHS, as discussed previously, did not have a strong evidence-based culture driving discipline-specific decision-making around treatment decisions. The ability to adopt multi-disciplinary approaches to applying evidence was hampered by the absence of this culture because individual disciplines lacked a uniform commitment to the use of EBP. Without this individual practitioner and/or intra-disciplinary commitment to EBP, it was premature to expect the development of an inter-disciplinary commitment to using evidence to inform team treatment decisions.

The second restricting factor related to the dependence, at HHS, on visiting professionals for the provision of allied health services such as podiatry and dietetics. The use of a limited-access visiting service from a geographically distant external location led to a reduced capacity to develop an agreed-upon evidence framework for multi-disciplinary practice. Visiting services are rarely an integrated part of an organisational team, which makes the process of planning, development, and implementation of multi-disciplinary EBP much more difficult.

The final constraining factor was linked to the workforce structure at HHS. The community-based nature of the majority of HHS services and the high level of reliance of this service on community nurses meant that many practice decisions were made by a single discipline (nursing) operating as generalist sole practitioners, across large geographical areas. This made the development of a multi-disciplinary approach to adopting evidence secondary to the development of discipline-specific

evidence-based frameworks for practice. This was particularly true in light of the scarcity of discipline-based evidence for remote practice. The extent to which the notion of multi-disciplinary practice was valued, but limited by the nature of the HHS workforce, is captured in the following statement by a HHS nurse:

> Multi-disciplinary approaches are very important. You can't just do it by yourself you need the input, medical, nursing, allied health input, a whole variety …however I suppose a lot of those things fall to the dominant professions that are in these areas such as nursing or medicine but I mean if you can get the other services here that would be great (z12).

Allied health practitioners were also asked about the use of evidence to inform multi-disciplinary practice at the HHS site. These practitioners made a clear differentiation between working as a team and adopting multi-disciplinary evidence-based approaches to practice. The assessment made was that the generalist and isolated nature of remote practice meant that, while the notion of multi-disciplinary EBP was a positive one to strive for, the nature of work meant that it was 'fragmented in different areas and so not conducive to easy access (q14)'. Consequently, the consensus among allied health was that, while 'it is good to work in a team…I don't think it's as important as evidence used by individual disciplines (g14)'.

The extent to which this view of the secondary importance of inter-disciplinary evidence translated into the practice context was also tested quantitatively. Questionnaire data sought to clarify whether HHS health practitioners had developed any understanding of the evidence bases of disciplines other than their own. Table 49 outlines results that show only three of the 19 participants had a high level of knowledge of the evidence used by other discipline areas, with five having a medium level of understanding, and a majority of 11 participants rating their understanding as low.

Table 49: Knowledge of evidence relevant to other health disciplines (HHS)

HEALTH DISCIPLINE	Total n	Low n	Medium n	High n
Medicine	2	1	1	
Nursing	11	7	2	2
Social Work	1	1		
Physiotherapy	2	1	1	
Occupational Therapy	2	1	1	
Diversional Therapy	1			1

This lack of inter-disciplinary knowledge of evidence bases of other discipline areas reinforces interview feedback that HHS team practice was not extended to the use of multi-disciplinary EBP, although there was an organisational commitment to team-based approaches to service delivery.

7.5.9 Remote Service Provision Frameworks: Summary and Discussion

The information presented in this subsection attempts to encapsulate the major service provision issues encountered by HHS practitioners and identify the ways in which these issues impacted on the applicability of the paradigm to this service setting. The data provide some invaluable insights into these issues and help consolidate results gained earlier in the chapter relating to location and organisational context. Importantly, the results confirm the existence of multiple levels of influence on practitioners' actions in regard to use of EBP:

- There is a strong correlation between knowledge about, and use of, EBP. The less the health practitioner knew about EBP, the less likely they were to apply it in their practice. This insight is neither surprising nor new, with previous investigations into EBP having explored this link (Upton, 1999a; Retsas, 2000; Pollock et al, 2000). What these data have shown is a strong link between practitioner background and levels of knowledge, understanding, skill, and usage of the paradigm. Of the six discipline types interviewed at the HHS site, four contained practitioners who all trained under either a hospital or a vocational model of training. This was true for nursing, occupational therapy, welfare, and pharmacy. This factor was identified by participants as inhibiting their capacity to readily increase knowledge and understanding of EBP, particularly given the perceived academic nature of EBP. The issue of the influence of training type in relation to EBP has been explored previously (Kenny & Duckett 2003; Nilsson Kajermo 2000; Olade 2003; Walker 2000). Olade (2003, p.12) identified that 'the higher the level of education of the nurse, the more likely the nurse would be to be involved in research utilisation'. Acknowledging the existent knowledge base, this is the first time that the influence of training type has been considered, across discipline types, in terms of its impact on EBP within the multi-disciplinary context. While this situation is not unique to remote practice, it was identified as a dominant characteristic of remote practice and a phenomenon that makes introduction of EBP more difficult.

- HHS, like many remote communities, had an ageing population, and an ageing workforce to service that population (Kenny & Duckett 2003; Hegney & McCarthy 2000). There had been a limited influx of new graduates with a contemporary knowledge of current service delivery frameworks at the study site. This was seen as impeding the introduction of EBP, as change agendas are often driven—and resourced—by professionals with new and contemporary insights on alternative service delivery options. This situation was compounded by the lack of a strong workplace culture for pursuing further education and training, and a number of practitioners nearing retirement. The capacity to introduce EBP was seen, therefore, as being

encumbered in instances where there is an ageing workforce profile and a resistance to the adoption of a change agenda.

- HHS, like the vast majority of remote health services, faced significant problems in relation to the recruitment and retention of staff. The literature pool on this issue, as identified, is extensive. The failure to recruit and retain staff limited the capacity of the HHS remote practitioner to adopt EBP because workloads were increased to fill the gaps created by staff shortages. Practitioners were then unable to allocate time to adopting EBP. The high use of short-term agency staff to counter staff shortages was also considered a disincentive to the adoption of EBP because the transient nature of this workforce results in a decreased capacity to ensure consistency in the application of evidence. Given the universality of the recruitment and retention issue across remote health service settings, this is likely to be relevant to other remote locations with similar workplace structures.

- The lack of infrastructure supports in the remote service setting (McCarthy & Hegney 1998) coupled with the nature of the community/practitioner relationship (Hays 1999; Green 2003; McDonald & Smith 2001) meant that HHS staff consistently worked to incorporate both the health and social needs of service users. HHS practitioners adopted multiple roles in response to the demands placed on them by the remote context, which, in turn, limited the time available to apply EBP. Further, and perhaps more importantly, the single-intervention, health-specific framework that informs and shapes EBP was assessed as non-responsive to the diversity and fluidity of the remote practice environment (Taylor et al. 2001, 2002; Weller & Veale 1999).

- Remote practitioners operate as generalists undertaking a variety of roles in order to deal with the staff, resource, and infrastructure scarcities that define remote practice (Hays 1999; Humphryes et al. 2002; Kenny & Duckett 2003; McDonald 2001; Pearson 1993; Smith 2001). This limits their capacity to specialise or focus service delivery on specific types of treatments or client groups. This situation has an impact on the use and applicability of EBP because it decreases the ability of the practitioner to develop evidence-based expertise in any particular area. It also increases the amount of generalist knowledge they require in order to respond to the needs of their practice context.

- There are significant differences between remote, urban, and regional practice settings (Dunbar 2001; Humphryes et al. 2002; McCarthy & Hegney 1998). This is problematic in regard to the capacity of the remote practitioner to apply EBP because available evidence bases that have been developed in urban locations assume a level of resource availability and infrastructure

support comparable to the environment in which the evidence was developed. This is not the reality of remote practice, and it means that evidence often lacks transferability and applicability. The amount of evidence available specifically to rural and remote practice and EBP is negligible (Pearson 1993; Parsons et al. 2003).

- The professional isolation of the remote practitioner has been identified as a critical factor in reducing the use of EBP (McDonald & Smith 2001). The study participants argued that the ability to apply or modify available evidence bases often depends on the capacity to discuss contemporary evidence with a colleague and access interactive professional development options (Taylor, Wilkinson & Blue 2001). This process may be required in order to localise evidence to maximise responsiveness, or it may simply be linked to a need to discuss the evidence-based options and their application. This type of collegiate support is not available to many remote practitioners, particularly if there is only one practitioner employed in a discipline area. This was identified as a characteristic of remote practice that diminished the value and applicability of EBP.

- While HHS practitioners promoted and endorsed teamwork as a critical component of remote service delivery, the limited uptake of the paradigm by single-discipline areas made the subsequent adoption of EBP for multi-disciplinary practice unlikely. The results clearly identify a requirement for a strong, discipline-specific, evidence-based culture to be in place before there is any possibility of the paradigm being adopted to inform and shape multi-disciplinary practice decisions.

While this examination of the service delivery frameworks that shaped the HHS site provides valuable insights into the issues inherent to applying EBP in the remote context, it provides few insights into the inter- and intra-disciplinary relationships that influenced adoption of EBP at the HHS site. The starting point for developing a greater insight into these relationships, and through this, a more comprehensive understanding of the applicability of EBP to this practice environment, is found in a consideration of the structure of the HHS multi-disciplinary team.

Unlike urban environments, in which the multi-disciplinary team is generally comprised of equal numbers of representatives from across discipline areas, the HHS team had a very high representation of nurses but few doctors or allied health staff. In order to understand the role this profile had on the uptake of EBP by the multi-disciplinary team, the power structures that shaped team-based service delivery at the HHS site and the impact of these structures on decision-making for adoption of EBP will now be explored.

7.6 POWER, PRACTICE AND RURALITY

Interview feedback from HHS participants identified divergent views in participant assessment of the power structures in place at HHS to drive clinical decision-making. While it was acknowledged that allied health disciplines made the decisions specific to their area of expertise, there was general agreement that the bulk of decision-making for overall patient care at HHS was driven by either nursing or medicine. Seven of the nine nurses interviewed at HHS identified medicine as the dominant profession in clinical decision-making, while two nurses and four of the seven allied health and management participants raised the dominance of nursing—linked to the nature of remote practice—in driving many (but not all) aspects of practice decision-making. This divergence in perceptions emerges from the nature of service delivery at HHS and the fact that services were delivered on site and in community settings. At HHS, the power structures driving decision-making varied in response to the nature of service delivery. Data analysis sought to clarify the nature of these power structures for clinical decision-making and determine the extent to which they influenced the uptake of EBP within the multi-disciplinary team.

7.6.1 Nursing Dominance

All participants across all discipline areas identified that the community focus of service delivery at HHS meant that nurses, particularly community nurses, are often the first line of contact for service users. The scarcity of health professionals in the remote context means that many referrals go directly to nurses rather than the medical or allied health practitioner:

> Here we get a lot of referrals that don't even go to doctors… A lot of them come straight to the district nurse rather than go to the doctor… but also they've been to the doctor and the doctor said 'go to the district nurse' (h13).

The nine nurses interviewed attributed this fact to the scarcity of disciplines other than nursing and to the level of expertise achieved by nurses in certain areas of service delivery, particularly in community nursing, aged care, and wound management. This view is captured in the following extract of interview, which is representative of the feedback from nurses across the study site:

> The people are not well assessed, it's usually just a referral with their name across the top and it may be for district nursing or wound dressing or for whatever and you ring them up and say 'what do you want?' and they say 'oh whatever you think is best'. Which, I suppose is not a bad way because it means they trust our judgement and, especially with wound management, most doctors are pretty damn average (v14) .

Accepting the central role of nursing in decision-making for treatment delivery at this study site, analysis of data sought to clarify whether the nature of this power base was such that nursing was driving or inhibiting the adoption of EBP. Feedback from all participants in the interview process presented a consistent argument that, while nursing was a leader in many aspects of treatment decision-making, this did not equate to nurses taking a lead role in promotion of the use of EBP.

To test this assertion, a review of relevant quantitative and qualitative findings for this study site was undertaken. The review of questionnaire results on EBP knowledge and use reveals that HHS nurses, as a discipline, were not consistent users of EBP and thus were less likely to uniformly promote its adoption in multi-disciplinary team treatment decisions. This assessment is validated by the following quote from a nurse:

> It would be nursing that would be dominant over when to come, what to do, what this patient needs … as they are more regularly there than the medical officer…if it was nursing staff, then it would be nursing. (in terms of using and promoting the use of EBP) and, if it's nursing, they won't use it [laughs] (r13).

This assessment is consistent with interview feedback from all nurses involved in data collection, all management staff, and two of the four allied health practitioners. Specifically, the assessment from one allied health practitioner was that, in regard to EBP, nurses 'rely on others to take the leadership on team approaches' (i14).

Additionally, interview data suggest that nursing had limited influence on the adoption of EBP as allied health tended 'to embrace evidence-based practice more quickly than nurses (h15)', and took the lead role in regard to the use of EBP at the HHS site. Accepting this assessment, it is important to point out that this feedback is not consistent with quantitative data on knowledge and use of EBP which show that allied health at HHS were not consistent users of EBP and did not have a uniformly high level of knowledge of the paradigm. Consequently, nurses were at no greater disadvantage than other disciplines in regard to having the knowledge base through which to promote the paradigm. They were, however, in a much better position to influence team decision-making as a result of their numbers and acknowledged sphere of influence in decision-making.

Therefore, while these data promote the notion that nurse authority in decision-making had limited impact on the adoption of EBP within the multi-disciplinary context, this is a simplistic assessment. While no interview data were collected to provide evidence that a lack of nurse leadership on EBP acted as a specific deterrent to the adoption of EBP at HHS, it is the assessment of the researcher that the failure of nursing to promote the paradigm within the multi-disciplinary team did inhibit

uptake. The sheer number of nurses, and their role in treatment decision-making, increased their capacity to shape team-based actions regarding EBP—even if they shaped these decisions through their inaction.

As six out of the nine participants in the multi-disciplinary team interview were nurses, they comprised a significant majority of the team and, as such, were likely to shape overall team direction. Even if their influence was limited to their own discipline area, this would still have had a significant impact on the adoption of multi-disciplinary approaches to practice at the HHS site and cannot be discounted.

The strength of influence of nurses is further highlighted when the data relating to medicine—the second group identified as influential in regard to decision-making—is considered. The data on medical influence on practice decisions clearly show that medical dominance at HHS was also shaped by the nature of remote practice, with a clear distinction made in the data between medical influence in the hospital setting and medical influence in community-based service delivery. Feedback from nurses operating solely in the community setting reinforces that medicine had a reduced influence in this arena, with practice decisions, including those relating to the use of evidence to inform practice, generally being made by community nurses. The extent to which this occurred is captured in the following extract of interview from a community-based nurse. It relates specifically to a question on whether medical practitioners in community-based service delivery were influential in driving the use of EBP by other health disciplines:

> No, not at all …Most of the doctors here, often with the district nurses especially, they'll say 'just do what you think'. They are not all that interested…I guess the doctors, they're here to make money, the majority of them, therefore they service their clients fairly rapidly. The doctors are rarely here for the community (and this drives the extent to which they pursue or promote EBP) (e15).

Accepting this distinction between site-based and community-based practice as a unique and powerful feature of the remote setting, available data does depict nurses as key decision-makers in community-based practice. The data do not provide a strong indication that they shaped the adoption of EBP in this setting, although they played an influential role in regard to the overall culture that existed at the site around EBP.

The data relating to the role of medicine in leadership and decision-making, specifically in site-based service delivery, provide a very different and compelling picture of the active use of power and the ways in which this shaped the uptake of EBP by disciplines other than medicine at HHS.

7.6.2 Medical Dominance

Data from HHS practitioners working in the hospital setting or across both domains, identified medicine as *the* dominant profession influencing health practice. Feedback from seven of the nine nurses and three of the four allied health practitioners in the interview process support this view.

The assessment of medicine as the dominant profession in site-based clinical decision-making was particularly strong among nurses. These were the only interview participants who identified specific instances of medicine overriding nurse decisions in the practice environment, with the assessment of this group being that 'it's still a matter of medicine making the decision about what happens and what doesn't happen [in a remote location] …In my experience it hasn't changed at all' (n13).

Given these perceptions around the level of medical influence, clarification was sought on the extent to which medicine used evidence to inform their practice. This line of data analysis was pursued on the assumption that if medicine was influential in decision-making and was driven by a commitment to EBP, this was likely to be factor in driving the use of EBP by the HHS multi-disciplinary team. Of the health practitioners who identified medicine as the dominant profession, six argued that medicine did not adopt EBP, two believed that medical practitioners at the site did use EBP, and the remainder were uncertain. This assessment corresponds with available data from medical staff on their own use of EBP. Two medical practitioners responded to the questionnaire with one self-assessing as a frequent user of EBP and one self-assessing as an infrequent user, while the interview feedback from medicine included an assessment that medical practitioners servicing the HHS site did not, as a general rule, use current validated evidence to inform their practice.

A number of specific examples were provided by practitioners of the non-use of EBP by medicine in the practice setting. The following is representative of a sample of these instances:

> In the last two weeks we've had big instances where major things have happened, and therefore they haven't looked at their practice and why they do it. I guess a good example's when your GPs do some gassing for surgeons that come from a major city. [These surgeon] asked them when they have their updates and the answer that came back was 'Well I don't have to do an update' and that was a bit scary (o12).

Acknowledging the dominance of medicine in clinical decision-making, and given the fact that there were variable assessments around whether medical decisions at HHS were informed by evidence, data analysis sought to clarify how these factors influenced the use of evidence by other disciplines in the HHS practice environment.

Twelve of the 14 health practitioners interviewed believed that 'it's often dependent on the view of the medical practitioner as to the importance of evidence-based practice, whether the team then adopts an evidence-based approach (f15)'. Analysis of interview data shows that the nature of this influence was quite complex. No specific interview feedback was provided by any health practitioner that identified medicine at HHS using evidence to inform their own practice decisions and, then (as a lead discipline) encouraging other practitioners in the multi-disciplinary team to adopt EBP to improve overall service delivery. In essence, qualitative data shows the existence of two distinct types of medical influence on EBP at HHS: *Users and Non-Promoters of Evidence*; and *Non-Users and Non-Promoters of Evidence*

Users and Non-Promoters of Evidence

Six of the nine nurses interviewed identified that, while medical practitioners might use EBP in their own practice, they did not support other disciplines within the team (in particular, nursing) to adopt the paradigm. In fact, feedback from nurses suggested the active non-promotion of the use of evidence in practice, as is captured in the following statement from a HHS nurse:

> I do believe that they (medicine) will use evidence but they wouldn't encourage the nurses and the clinical staff to use evidence… (and this is) because I think the medical staff see the nursing staff as very inferior (r13).

Feedback on this type of influence in relation to EBP included examples of situations in which medical practitioners would actively discourage the use of evidence because of the potential for a shift in the power balance—specifically, in regard to the medical/nursing relationship. The nature of this influence is captured in the following case example, where a HHS nurse discusses her experience of active non-promotion of evidence by HHS medical practitioners.

Case Example 3: A HHS Nurse's Story of Active Non Promotion of EBP

Janes' Story: A rural nurse's experience of medical dominance

In reality, no matter what the nurse says, it is disregarded, and then the worst case scenario is where, if you suggest what you know to be the best thing to do in this situation, they will make sure that they don't do that. I've had that happen to me…having come from a major teaching hospital to here, couldn't believe actually that the 'handmaiden' view was so prevalent. And I think that we can study all we like and have all the protocols in place that we like and say 'this is the evidence based practice, the best practice'. If the doctor disregards it, there's no mechanism in place to make sure that we can't just disregard it, because we are working under the medical model. To the maximum. And that's more prevalent in rural communities because, in the back of your mind you know that we really need them, and it's not like in the city hospitals where, if you upset one registrar, well he might not be on when you really need someone next time. Whereas here it is going to be that doctor so you have to bow to them. And then it becomes very hard to be a patient advocate too because you know what (the evidence states) is right for the patient but you know if you upset the doctor to the extent that they lose interest in the patient, you know, well it's still very much a game. And I hate it (f15).

Non-Users and Non-Promoters of Evidence

Those practitioners who identified that medical practitioners at HHS did not use EBP believed that these individuals were also non-promoters of EBP. The issues arising in regard to this type of influence mirror those outlined in Case Example 3, with feedback identifying that non-use of evidence by a lead discipline such as medicine limits the capacity of non-medical health practitioners to implement EBP in their own practice. This was found to be particularly pertinent in a remote community with a strong culture of people believing 'that doctors are gods and assuming they are studying and updating their knowledge when, nine times out of ten they are not' (o12).

The scope of influence of this culture on the implementation of evidence-based approaches was specifically identified by four nurses and is captured in the following extract of interview:

> I find that doctors are very influential with treatments…if you try and say to the clients 'the evidence has proven that this is successful' or 'this is of more benefit to you' because their doctor said 'no' it's like you've got this brick wall you've got to get through and that's what I

> find in this community. You've gone off and you've done your study and you've learnt all this new evidence but you come back and implement it to the community and with the doctors who have still got their set way a lot of the people will follow the doctors' point of view (g15).

Therefore, even in instances where a practitioner embraces the evidence-based paradigm, their capacity to apply it to their practice can be determined by the power structures that shape their practice environment. This data captures the strong link between power structures and the use of evidence in practice and highlights the inherent shortfalls of assuming the capacity to introduce new concepts to remote communities without understanding the sociobehavioural influences that shape the context into which new paradigms are attempting to be introduced.

A final unique aspect of the HHS site that is linked to the issue of power and practice, and the ways in which they shape the adoption of EBP, relates to the issue of overseas-trained doctors and the role they played in the use of evidence at HHS.

7.6.3 Overseas Doctors, Citizenship Agendas, and EBP

Medical services at the HHS site were provided, to a degree, by overseas-trained practitioners. Of the five doctors providing services across the HHS region, two were newly arrived from overseas (who did not have English as their first language), and one had been at the location for almost two years (who did have English as a first language). The feedback from a number of HHS health practitioners was that overseas-trained doctors, although part of a dominant profession in regard to clinical decision-making, were viewed differently to the Australian-trained doctors servicing the HHS population. They were generally not considered an integral part of the community, which, consequently, impacted on the value given to their practice decisions, and on their ability to influence the practice of other disciplines operating at the site. This feedback was not received from all participants in the interview process but was identified as an issue by five of the 14 participants. Data analysis of these participants' transcripts highlights the belief that overseas-trained doctors had a less connectedness with the local community than the other medical practitioners working in the region. As identified in the following extract, this diminished connectedness was due to the fact that overseas-trained doctors were perceived by this cohort to be short-term visitors to the region:

> Because we're classified as rural and remote we can actually bring doctors in from overseas much easier…Australia and they have to come and do at least 2 years in a rural and remote area, after the appropriate exams, then they can apply for citizenship, then they can apply to move to other areas and get a Medicare provider number and all those things you need to be a

> doctor. So we're working on the theory that probably the majority of them will rotate through our health service every 2 years (e15).

While the purpose of this study is not to examine the nature of the relationship between overseas-trained practitioners and the HHS remote community, nor the motivators for these relationships, it does seek to understand the aspects of remote practice that influenced adoption of EBP. As data have underlined the major role that is played by medical practitioners in influencing treatment approaches within the remote community, it is important to explore the extent to which a lack of connectedness with community might influence the adoption of EBP.

A central issue identified in feedback from non-medical staff relates to a lack of understanding on the part of overseas-trained doctors of how service delivery works in the remote context (v12). This resulted in a strong reliance by these doctors on other health practitioners, particularly community nurses, to clarify current practice approaches. This reliance, consequently, reinforced the power structures of nursing in clinical decision-making and, ultimately, could be seen to maintain the status quo in regard to the use or non-use of evidence. The following quote illustrates this scenario effectively:

> Yes, we had a meeting a fortnight ago and they said things are so different here to what it is over there, and they just wanted a list of what we did, who the district nurses were and everything (relating to practice) (v12).

This statement also reinforces the fact that new arrivals from diverse backgrounds also lack connectedness with established health service delivery structures. Interview feedback from an overseas-trained medical practitioner (d15) verified the data provided by other health practitioners and highlighted a number of key issues that were seen to impact on the ability of this practitioner to adopt and to promote the paradigm:

- Medical practitioners trained overseas had different perspectives on what is appropriate evidence and how often you should be accessing evidence. This specific assessment was also made by three nurses involved in the interview process (v12, e15, o12). While different does not mean better or worse, it does mean that there is a lack of a shared understanding about EBP and subsequently an increased degree of difficult in negotiating agreed-upon strategies for the use of evidence in practice.

- Practitioners whose first language was not English encountered difficulty using readily accessible databases such as Medline or Cochrane. This is particularly pertinent when much

of the available evidence accessed from a computer in a remote Australian location is in English. It is also particularly relevant given the IT infrastructure issues that will be discussed in a later section of this chapter.

- In instances where these practitioners have access to, or knowledge about, current best evidence, they were reluctant to argue with the established treatment approaches because of the language barrier. Additionally, they were aware of existing perceptions about their place in the community and the limited credibility they have in the eyes of the community and other health practitioners. They believed this to be at a lower level than the credibility given to medical practitioners at the site who were not from overseas, or whose first language was English. This view was supported in feedback from two nurses (o12 and e15) as well as by a specific case example in which the overseas practitioner suggested a particular, evidence-based approach be used. This advice was discounted by the Australian-trained doctor and the patient, with the result that the patient suffered increased trauma and permanent injury scarring that could have been avoided. The overall assessment of this practitioner, supported by feedback from health practitioners at the HHS site and outlined in a previous section, was that remote medical practitioners did not consistently use or promote current best evidence to inform their practice.

These data clearly illustrate the dichotomy that exists in regard to the power structures that drive practice at the HHS site. Qualitative data have shown that HHS medical practitioners regularly took the lead role in clinical decision-making and, linked to this, in promoting the use of EBP. They were allocated a power base, by virtue of their position, that has been identified as influential in shaping inter-disciplinary decisions relating to EBP. At the same time, within the same discipline grouping, there existed an intra-disciplinary power imbalance that reinforced existing power structures and limited the incorporation of alternative perspectives on the role of evidence to inform service delivery.

These insights have showcased another unique aspect of remote practice and provided a detailed insight into the issues of power, influence, and decision-making that underpinned the promotion of EBP at the HHS study site.

7.6.4 Power, Practice and Rurality: Summary and Discussion

Data from the HHS site clearly depict the ways in which power structures play a determining role in the adoption of EBP in the remote service context, with the following key findings of relevance:

- Nurses play an influential role in decision-making in the remote service setting, particularly in community-based service delivery (Angus, Hodnett & O'Brien-Pallas 2003; Hegney 1998b; Hegney & McCarthy 2000; Kenny & Duckett 2003; Keyzer 1997; McDonald & Smith 2001). At HHS, this had led to some modification of traditional powerbases and the emergence of nurses as the dominant profession in distinct areas of health practice. Consequently, nursing must be considered to be a key discipline likely to shape the level of adoption of the paradigm in this service setting, albeit mainly among other nurses. Given the large number of nurses and their sphere of influence in service delivery, the scope of this capacity to shape uptake is significant. Study results show that EBP was not actively promoted, or adopted, by this discipline area at HHS, due to a lack of knowledge and understanding of the paradigm and a corresponding inability to allocate time to pursing evidence to inform practice. These findings support those of previous studies (Nilsson Kajermo 2000; Olade 2003; Retsas 2000; Upton 1999a) and emphasise the importance of actively supporting nurses in the development of skills relating to EBP if the adoption of this paradigm in remote settings is to increase.

- In line with traditional notions of medical dominance (Kenny & Adamson 1992; Warlow 1996; Willis 1990), medicine remains the dominant discipline in the remote service context and maintains traditional role boundaries of leadership in clinical decision-making. Site data suggest a limited level of use of EBP by this discipline, whilst showing that the power and influence ceded to medicine significantly influenced the adoption of EBP by disciplines other than medicine. There were a number of overseas-trained medical practitioners at the HHS site whose presence created a functional split in regard to the ability to influence uptake of EBP because they were not attributed the same levels of power and control in clinical decision-making. The data reinforce unique aspects of remote service delivery and highlights the complex inter- and intra-disciplinary relationships that shape the adoption of this paradigm in these settings.

Data analysis in preceding sections of this chapter has reinforced the central tenet of this thesis: that there is a contextual mismatch between urban policy and rural practice. This mismatch has been highlighted consistently by the organisational, location context, and service delivery issues raised and discussed by interview participants. The concluding section of this chapter will continue to examine differences fundamental to shaping the urban/rural differential—the accessibility constraints created by the remote environment.

7.7 ACCESSIBILITY CONSTRAINTS

As reviewed in the theory chapter, the available literature contains a overabundance of information on linear interventions for accessing and applying evidence in the work context. Fundamental to these approaches is an ability to access practical supports including professional development, research literature, and the information technology for online resourcing. While a fundamental tenet of this thesis is the inadequacy of linear uni-directional processes to bring about change, there is no doubt that, as part of a multi-directional change strategy, there must be the capacity to access evidence. Interview feedback for the HHS site signalled that access to these supports remains limited due to geographic isolation and the limited infrastructure services.

7.7.1 Professional Development OR Service Delivery: An Imposed Choice

All participants in the interview process discussed the importance of being able to access professional development structures to develop the skills necessary for adopting EBP. All management interviews included statements from HHS management of the intent to increase access to professional development for all staff, while strategic planning documentation for the organisation included professional development as an integral part of the organisational restructure. Additionally, interview feedback from 12 (of 14) health practitioners specifically stated that management had increased their responsiveness to requests from HHS staff to access professional development. Health practitioners involved in the interview process identified that professional development was needed in regard to the skills required to access guidelines and databases (e.g., the Clinicians Health Channel), and for more general continuing education specific to discipline areas and treatment modalities. Despite this increased level of commitment, all health practitioners interviewed identified that access to professional development remained problematic at HHS because of the remote practice context. This problem of access was identified—by practitioners and management—as being linked to two unique elements of rural practice.

The first barrier was the lack of on-site training available at the HHS site. While management had attempted to improve access to professional development through the employment of a nurse educator to organise and/or deliver training, this training was only available to specific disciplines. This was due to the difficulties in attracting health professionals to deliver training in a remote area; firstly, because of cost constraints, and, secondly, because few health professionals are willing to travel long distances to deliver short training sessions:

> I do think it's getting better at getting things around here for nursing but not for the other disciplines 'cause certainly the physios, I've never seen anything close by for them and the

> occupational therapists, you know if they get something in Ballarat or Bendigo then that's considered pretty close (y16).

The second impediment was the distance HHS practitioners needed to travel to access off-site training. While time release for attending professional development was supported and readily provided by site management, funding for staff replacement—which was necessary to release practitioners to attend training sessions—was limited. Twelve of the 14 health practitioners interviewed identified this as a major barrier to accessing professional development.

> I try to go to as many things as I can, they, management here do allow you to; do provide us with a car to be able to go to these things, they do pay up I mean they've been good like that but they don't back fill, I mean you've still got you know your work load when you get back here (w16).

While the inability to replace staff (or 'backfill') is not unique to the remote context, the geographic isolation of the HHS site made its impact much more significant. Unlike their urban or regional counterparts, practitioners at HHS needed to be absent from their service location for longer periods due to the time involved in getting to and from a training session:

> The isolation has an impact on use of evidence-based practice (in terms of access to conferences) because people have got to travel such a long way to go to conferences. They might have to spend 2 days away to go to a conference for half a day (t13).

Health practitioners believed that this situation required them to make a choice between professional development and service delivery because, as identified in the following quote from a nurse, when a practitioner is absent from a location for an extended timeframe, certain services may also be absent:

> There's nobody. I'm the only available (program area) in the whole region … So there's probably no services here for, you know, for the whole area at that time usually (l12).

As outlined in the following quote from HHS management, this was identified as a barrier to the attainment of EBP by all health practitioners and all management staff.

> I think access to appropriate forums where the evidence based practice is discussed and communicated to the field (is critical to uptake). A lot of these sessions are held in Melbourne, that means one or two days at a time out from the organisation to attend a session down there. It's very difficult in terms of that and the capacity to go, to release a person to go…right at the moment I think it's probably one of the significant barriers (x13).

The potential to use alternative training mechanisms was also raised; however, the cost and the small workforce inherent to remote practice were seen as limiting the capacity of HHS management to introduce long distance alternatives such as teleconferencing:

> Teleconferencing -We haven't got the facility here, it's apparently very expensive to install, and then sometimes to tap into the session itself is very expensive on top of that. And again you have to look at the numbers because 2 people might come to it and it can cost $1000…with the clinicians' health channel, we had 2 Div 1's attend 2 different sessions, that was all, but she just got 66% of our permanent staff there (s16).

All management staff and a majority (10 of 14) of health practitioners saw the internet as a potential mechanism to overcome some of these issues; however, there were inherent difficulties around the effectiveness of this resource in the HHS remote location. The major difficulties identified related to lack of computer hardware and a poor IT infrastructure (an issue which will be explored in detail in a later subsection of this chapter); however, there were also concerns raised regarding practitioner proficiency in using the internet system for the purpose of professional development.

> So I think with internet learning coming into vogue that we won't be so disadvantaged in the future, but then we've got the problem of getting staff to know how to use a computer and become very confident with that, so that's another challenge; to make sure that we have got all the staff that know how to access all this information and would be competent at doing a distance learning package (r16).

The issue of practitioner proficiency in accessing online resources was raised by HHS management and professional development staff as a key inhibitor to the expansion of professional development opportunities and uptake of EBP. However, only three of the 14 practitioners interviewed considered this a potential inhibitor to the uptake of EBP.

Quantitative data on this variable support the assessment of health practitioners, with Table 50 showing that only six of the 19 practitioners self-assessed as having low levels of computer-based skills, while a majority of 13 out of 19 self-assessed as having either moderate or good skills in using the computer and internet.

Table 50: HHS practitioner skill at using computer and internet resources

HEALTH DISCIPLINE	Total n	Poor n	Average n	Good n
Medicine	2	1	1	
Nursing	11	5	3	3
Social Work	1			1
Physiotherapy	2		1	1
Occupational Therapy	2			1
Diversional Therapy	1			1

Accepting that the isolation of this service site necessitates the use of the computer and internet as alterative mechanisms for skill development, the more critical factor to be identified by all participants in the interview process related to resource access—particularly access to online and/or documented evidence.

7.7.2 Archives, Hardware and Brown-Outs

Unlike many regional and urban health services, HHS does not have on-site library resources for practitioners to access when seeking evidence to inform practice decisions. A majority (10 of 14) of the health practitioners interviewed raised the absence of a functional library as a barrier to maintaining currency in treatment approaches. Beyond the cost of establishing a library, the issue of ensuring that a library remained up-to-date was highlighted as problematic. A library service had previously existed on the site but had failed to retain an appropriate level of currency, thereby rendering it useless to HHS health practitioners, because 'there's no good having a library that's older than you (j13)'. While practitioners acknowledged that they did have some capacity to access the library facilities of other health services in the region, this was not considered a viable option for access on a regular basis.

A compounding aspect of this lack of access to library services was the lack of availability of computer hardware with which to access online services, as an alternative to an on-site library. While HHS administrative staff identified that there was 'one (computer) in each area (q13)', and believed that this increased the capacity for staff to access resources, a majority (10 of 12) of health practitioners assessed the number of computers available to staff as insufficient.

This assessment was supported by a HHS manager who, in discussing the major barriers to the adoption of EBP at the site, stated:

> We don't have a library that nursing staff or Allied Health or GPs can actually access any updated information; being so small so remote we don't have any easy access…And I think that's a really major issue …I mean we don't even have computers for staff to, you know, come in and use, to access internet (m16).

A further complicating factor in increasing online access by HHS health practitioners is the culture that exists around the perceived value of spending time on the computer while accessing resources. This issue was raised during the multi-disciplinary team interview and related to the expectation that the majority of work undertaken during a shift be 'hands on'. The allocation of time to undertake internet searches—regardless of whether or not the searches were work-related—was not encouraged. It is important to point out that this view was not identified as coming from organisational management but rather from colleagues at the site. The attitude is effectively summed up in the following quote from a nurse in which they identify, and reinforce, existing perceptions about the value of internet searches during worktime:

> Of course the clinicians don't get much time to use it and there's still that thing about being seen sitting at the desk doing nothing or playing on the computer (laugh)… if we had a library that had a couple of computers, people, after hours or during their breaks, might come and access it (q13).

Another major barrier identified as limiting the capacity of HHS health practitioners to use the internet to increase their evidence-based knowledge and usage arises from the poor IT infrastructure supports at the HHS site. The regional and the organisational IT infrastructure servicing HHS was identified, by all study participants, as substandard. HHS, as a remote service site, relies on the existence of adequate regional telecommunication structures. All interview participants identified that there were significant areas across the region that were subject to 'brown-outs' (when telecommunications coverage is intermittent), which resulted in a level of internet access that lacked reliability, involved delays in accessing network connections and required extended download times. This situation was a direct result of HHS's location 'at the end of the line for Victoria for infrastructural IT (l16)' with the consequence that health practitioners at HHS have chosen to avoid using the system unless it is absolutely necessary.

Consequent to the poor regional IT infrastructure, the HHS site had an under-developed organisational IT infrastructure. At the time of data collection the service was experiencing major problems in relation to accessing internet services, and there was an acknowledgment from management that work needed to be undertaken to improve the internal IT infrastructure.

> We don't have a good IT structure set up internally. The CEO didn't even have access to the internet until two weeks ago! So that's our IT structure, which is very very poor. The internet servers are frequently 'down' and computer access is extremely slow (q13).

The HHS site, therefore, was constrained in regard to a number of fundamental tools inherent in the evidence-based movement. Because of the remoteness of HHS, health practitioners had a reduced capacity to access professional development, both on-site and off-site. The contemporary alternative, provided by the internet and electronic databases, was compromised due to a lack of adequate and plentiful computer hardware, the substandard regional and organisational IT infrastructure, and a workforce culture that distinguishes 'seeking evidence to inform your work' from 'real work'.

These are influential factors that need to be addressed if HHS, as a remote health service organisation, is to maximise its capacity to increase knowledge and usage of evidence in practice.

7.7.3 Accessibility Constraints: Summary and Discussion

The final section of this chapter has focused specifically on the accessibility issues identified by HHS practitioners as specific to the remote context, yet instrumental in reducing the ability of the remote health service practitioner to adopt EBP in their practice. Guidelines developed on the process to be used in adopting EBP assume a level of resource accessibility that is currently unavailable at HHS.

The tyranny of distance means that remote locations have a decreased capacity to access professional development options, particularly in comparison to urban or regionally based health practitioners. Remote practitioners are often forced to make a choice between service delivery and professional development (Blue & Howe Adams 1993; Hegney & McCarthy 2000), and this presents major difficulties, given their commitment to the needs of the community. Studies have identified the value of professional development in improving practitioner knowledge and skill bases (Fritsche et al. 2002; Kronick et al. 2003); however, accessing these remains problematic. While the rapid growth of information technology in the last decade has increased access opportunities for remote practitioners, the capacity to maximise the benefits of this resource is dependent on adequate IT infrastructure being in place—both within the health service organisation and across regional telecommunication systems. Additionally, practitioners need to be given adequate access to computer hardware if information technology is to be a viable mechanism for enhancing practitioner knowledge of available research evidence. The 2003 study by Gosling, Westbrook, and Coiera (p. 14), which examined the impact of information technology in increasing

uptake of EBP by rural practitioners, found that lack of support for technical infrastructure and staff training in information accessing was a deterrent to the adoption of EBP. Adequate access involves not only the provision of computers but also a specific allocation of time for practitioners to use internet resources. This is necessary to counter current workplace demands on practitioner time (which have previously been identified as a key deterrent to the use of EBP) and also as part of the process of legitimising the allocation of time, in the workplace, to professional development activities.

7.8 THE PLACE OF EBP IN THE HHS PRACTICE SETTING

The HHS case study has provided valuable insights into the issues created by service remoteness in relation to the adoption of EBP. The findings for this case study site have consolidated the trend that emerges incrementally as the degree of rurality increases across each of the study sites.

As remoteness increases, so too do the issues faced by practitioners aiming to implement EBP. The practicalities relating to accessing professional development, online facilities, peer support, specialist services, and equipment rise exponentially in direct relation to the increase in distance from metropolitan service bases. Further, the impacts on practice created by the complex relationship that exists between the community and the health practitioner, and the community and the health service, are unique to remote practice. As has been shown, they play a pivotal role in determining the applicability and adoption of EBP. They are exacerbated by the traditional boundaries created by professional socialisation and the dominance of the medical professional in a conservative remote location.

The data from HHS, the most remote of the three sites, demonstrates unequivocally the urbocentricity of the evidence-based movement and the many ways in which this movement fails to translate to the rural and remote context.

8
Conclusion

STUDY FINDINGS CONSOLIDATION AND RECOMMENDATIONS

Successful implementation of EBP by rural and remote multi-disciplinary teams remains elusive, but not for the reasons we have assumed…Redefining current understandings of the sociobehavioural factors influencing the adoption of EBP

8.0 INTRODUCTION

This final chapter aims to discuss the insights that have been gained and the conclusions that have been drawn as a consequence of this study. The chapter is divided into two sections: the first section discusses the nature of the research study and the basis this has provided for reconceptualising notions of EBP, while the second section consolidates the results across each of the study sites and presents the new knowledge that has emerged through these findings. The findings outlined in both sections provide the basis for the recommendations relating to EBP in the rural and remote service context. These recommendations are included, where appropriate, throughout the relevant sections.

The nature of the understandings emerging from this study can be closely linked to the parameters established for the research, which were set outside the traditional conceptualisations that dominate in the EBP research arena. In an environment, where evidence-based research is growing exponentially (Davis et al. 2004), the majority of empirical work remains specific to the metropolitan context (Parsons et al. 2003). While there are some notable exceptions to this (Blue et al. 2003; Gosling, Westbrook & Coiera 2003; Taylor, Campbell & Campbell 2003; Taylor et al. 2001, 2002), the focus of this study—which allows a review of differences across varying degrees of rurality—has provided a new dimension to available knowledge and understandings of EBP and rural practice. Further, in an environment in which quantitative research remains the predominant methodology through which to investigate the uptake of EBP, this qualitative study contributes to an emerging interpretivist paradigm that enables ‘an understanding of contextual

issues…that would not have been uncovered using quantitative methods such as the randomised control trial' (Gosling, Westbrook & Coiera 2003, p. 14).

Applying an interpretivist methodology to increasing understandings of EBP was therefore foundational to this study. Established as an aim in the theory chapter of this thesis, and applied successfully to data collection and analysis, it provided the scaffolding for building both new and consolidating knowledge specific to rural multi-disciplinary practice. Importantly, based on the results the approach engendered, its application validated the decision to shift from the traditional conceptualisation of EBP, with available insights into EBP in the remote practice setting substantially enhanced.

8.1 A NEW FRAMEWORK FOR CONCEPTUALISING EBP

As detailed extensively in chapter 3 of this thesis, the evidence-based movement has traditionally assumed linearity between evidence development and field implementation. This view is typified in the persistent application of rational and deterministic intervention strategies that, by their nature, mirror the science of EBP. Strategies such as lectures, workshops, and the provision of on-line resources (and multiple combinations of these) reflect this approach and epitomise the dominant assumption that application of new evidence is essentially dependent on the professional receiving new knowledge. While the low levels of uptake of EBP that have characterised the movement (Ferlie, Wood & Fitzgerald 1999; McDonald 2001; Murphy 2003; Nilsson Kajermo et al. 2000; Olade 2003; Retsas 2000; Upton 1999a) have increasingly shown this assumption to be flawed (Ashburner 2001; Dopson et al. 2002; Ferlie et al. 2001), it has been maintained nevertheless.

While a growing movement promoting the explicit application of interpretivist approaches to better understand the impact of the complex human, social, and organisational behaviour on uptake (Dopson et al. 2001; Dopson et al. 2002; Ferlie, Barton & Highton 1998; Ferlie, Wood & Fitzgerald 1999; Ferlie & Shortell 2001) is acknowledged, many contemporary intervention studies remain rooted in traditional approaches that give limited consideration to the import of sociobehavioural influences on uptake (Walter, Nutley & Davies 2003a, 2003b).

This study, across three very different locales and involving diverse health disciplines, has shown unequivocally that the focus on the structured provision of knowledge fails to account for or accommodate the diverse professional and personal philosophies and/or the settings that shape decisions around uptake. The rural settings encompassed by this study are characterised by

divergent social and professional cultures that were found to be instrumental in determining uptake. These factors needed to be given the opportunity to emerge as part of the data collection process. The import and impact of human behaviour on the uptake of EBP is given minimal consideration when EBP is conceptualised within a narrow framework that assumes implementation is assured simply by developing different and more effective ways of imparting knowledge.

This study has provided a new perspective to knowledge about EBP by allowing practitioners to clearly articulate their view of EBP against the social and behavioural factors that influence their practice. This perspective has shown that implementation of EBP needs to be conceptualised as part of a complex professional practice environment where the ways practitioners construct their practice is far more important to the uptake of EBP than the knowledge individuals have about EBP. The emergent knowledge achieved through the application of an interpretivist approach has been a notable methodological achievement of this study. At the policy level, as articulated in recommendations one and two, it points to the need for a realignment of research endeavours, if available understandings into the nature of EBP are to expand to encompass the impacts of human behaviour at a variety of levels.

Recommendation 1

That the Victorian Department of Human Services, the National Institute of Clinical Studies, the National Health and Medical Research Council and the Commonwealth Department of Heath and Ageing be provided with detailed feedback on the importance of sociobehavioural research in developing greater insights into the nature of EBP in the rural and remote context.

The Victorian Department of Human Services is industry partner for this particular study. The researcher has provided regular updates on the progress of the research and will continue this on completion of the project. Feedback includes written updates, the provision of a final report, and the delivery of a seminar outlining the findings and recommendations for policy development. This contact provides an existing and continuing mechanism for achieving this study recommendation.

The researcher has strong industry links with the Commonwealth Department of Health and Ageing which, it is envisaged, will facilitate distribution of this study. The process for distribution of this report to the National Institute for Clinical Studies and the National Health and

Medical Research Council will be explored with these two government departments and within the Office of Research and Graduate Studies at the University of Ballarat.

Recommendation 2

That importance of sociobehavioural research in expanding existing knowledge on implementation of EBP be promoted through the presentation of the findings of this study at conferences and in journal articles.

This recommendation will be achieved through a commitment to publish a series of articles concerning the outcomes of the study and the importance of adopting an interpretivist methodology in increasing learnings around implementation of EBP. The process has been commenced through publishing one article on EBP and social work practice and will be continued over the twelve month period following completion of the study.

8.2 KEY CONCLUSIONS ACROSS STUDY SITES

Limited work has been undertaken relating specifically to rural multi-disciplinary practice (Murphy 2003; Taylor, Campbell & Campbell 2003), however a number of themes identified in previous metropolitan and rural studies have been confirmed through the findings of this study. This was particularly true of levels of knowledge about EBP and the role of organisational support in facilitating the uptake process. These conclusions will be presented, as will emergent knowledge specific to rural multi-disciplinary practice, in the following sub sections of this chapter. In regard to new knowledge, the conclusions that will be discussed are clustered under the following broad themes:

- Divergent knowledge and contested understandings
- Practice legitimisation: Myth or reality?
- Sovereignty overruling science
- Community authorising practice
- EBP and institutional dependence
- An Urban Construct

8.2.1 Knowledge, Understanding, and Uptake

Analysis of the data found that all disciplines, across all locations had some knowledge of EBP, although levels of knowledge were higher in some disciplines. Scientific disciplines such as medicine and physiotherapy consistently had more knowledge about EBP than disciplines such as social work, nursing, and occupational therapy. Knowledge and understanding were found to diminish as practitioners moved from a broad conceptualisation of EBP to a detailed process of locating evidence and applying it to inform and drive practice decisions. This was true in all discipline areas, although this diminution of knowledge was consistently more prevalent in the non-scientific disciplines across all study sites.

While limited research is available that involves a comparative analysis of knowledge levels across different discipline areas, the meta-analysis of the literature provided a cross-referencing of previous, discipline-specific work (Blue et al. 2003; Dantas & Upshur 2003; Dowswell, Harrison & Wright 2001; Gambrill 2003a; Guyatt et al. 2000; Taylor et al.2000). This process enabled an informed comparative analysis to be undertaken between the findings of this study and those of previous studies, with results confirming the maintenance within multi-disciplinary teams of known trends in discipline-specific knowledge of EBP.

The findings identifying greater knowledge of EBP among scientific disciplines across all study sites were also reflected in the statistical and interview feedback on frequency of usage. Results showed that, as an average across sites, usage of EBP was much higher among scientific disciplines. This is evidenced by combined, cross-site figures that show that 60% of physiotherapists and 45% of doctors across the study sites accessed evidence on a daily or weekly basis, as opposed to 25% of occupational therapists and 22% of social workers.

Regardless of inter-disciplinary differences in knowledge of EBP, study data identified a strong and consistent need for support in skill development for using EBP. This was found to be an issue across all study sites and all discipline areas.

The level of support for the notion of EBP was high across all study sites with the majority of practitioners assessing it as a valuable tool for practice enhancement. This finding confirms discipline-specific results from other studies (Guyatt et al. 2000, Taylor et al. 2002; Upton 1999a), and enhances this knowledge by providing a multi-disciplinary dimension to existing attitudinal studies on EBP. As with the vast majority of attitudinal studies, and as outlined in detail in chapter 2 of this thesis, a positive attitude to EBP did not necessarily equate to its use.

Some negative assessments of the value of EBP were found with a minority of nurses, social workers (across all study sites), and orthotists/prosthetists (at the QHS site) who raised questions regarding the applicability of EBP to their practice models. These individuals, however, did not reject the general notion of EBP as a valuable mechanism for improving health outcomes. Rather, resistance was linked to issues of disciplinary diversity and the extent to which discipline practice frameworks are aligned to the science of EBP. The centrality of disciplinary diversity in determining both uptake and applicability of EBP to practice was a strong theme to emerge across all study sites and provided the basis for new knowledge around disciplinary diversity and the impact this has on understanding and subsequent uptake of EBP.

8.2.2 Divergent Knowledge and Contested Understandings

A key emergent finding of this study has been enabled by situating the research in a multi-disciplinary team setting. The nature and construction of EBP is that it assumes a uni-disciplinary model of practice in which the individual practitioner works on a single treatment need with an individual, compliant patient. The single treatment component of this construct has been extensively critiqued and criticised as failing to meet the complex needs of the practice environment, as it is increasingly recognised that patient needs are rarely uni-dimensional (Jordan & Jordan 2000; McDonald & Daly 2000; McDonald & Smith 2001; Taylor et al. 2001; Weller & Veale 1999). The uni-disciplinary nature of EBP, however, has undergone much less rigorous review. By locating this study within multi-disciplinary teams, the inadequacy of the uni-disciplinary nature of the model was clearly shown as practitioners worked to resolve the divergent and contested understandings that they held about EBP, and its applicability to their practice models.

In the multi-disciplinary context, discipline differences were found to be of major significance in determining the extent to which EBP is adopted. Across all study sites, professional socialisation and practice philosophies were found to be instrumental in determining perceptions around the applicability of EBP to practitioner decision-making. This was closely linked to the extent to which practitioners had encountered EBP in their initial formal training, and the value placed on scientific knowledge by the discipline within the practice models intrinsic to that discipline.

Results clearly show that differences are much more complex than simply knowing, or not knowing, about EBP. Indeed, that type of knowledge shortfall would be addressed by many of the strategies already in place to disseminate information. Analysis of feedback from within the multi-disciplinary team across all sites found fundamental differences in perceptions around what

constitutes legitimate knowledge. Notions of divergent knowledge are not new in relation to EBP, and have been discussed in chapter 2 of this thesis. The work of Mullen (2002b, p.2) captures the fundamental difference that can exist in relation to knowledge when he writes about social work views of evidence; an assessment which is, in itself, the antithesis of evidence, as defined within the framework of the RCT:

> The term *knowledge* can be used to describe something external to the knower, a static body of information…However, the term can be used to refer to a subjective state of the knower…the (social work) practitioner's knowledge is derived from many sources, but always derived through a process involving personal experiences with those sources.

However, while this is an area that is being increasingly investigated (Gambrill 2003a; Mullen 2002b) by examining how practitioners construct their practice within the context of the multi-disciplinary team, the implications of divergent knowledge and contested understandings become much more significant. It has been illustrated, for the first time; through the mechanism of an empirical study on rural multi-disciplinary EBP, that EBP has the capacity provide the basis for disempowerment and division within the multi-disciplinary team context.

At the QHS site, where the greatest number of social work staff involved in the study were employed, EBP is promoted and supported by the majority of health practitioners, as well as by organisational and government policy imperatives. Within this environment, social workers believed themselves to be at a professional disadvantage as a result of a perceived failure to scientifically measure their practice decisions. This disadvantage resulted in a marginalisation of this group within the multi-disciplinary team and highlighted the ways in which the maintenance of the notion of the RCT as the 'gold standard' of evidence was a divisive aspect of the evidence-based movement. Degrees of marginalisation of social work, linked to the science of EBP, were identified across all of the study sites[1]. The failure of social work to scientifically validate practice was consistently identified as a marginalising aspect of working within a multi-disciplinary team, regardless of whether other practitioners within the same team used evidence to

[1] While detailed evidence of the extent of social worker marginalisation resulting from EBP is available from all study sites, it has only been included as specific to social work in the data from QHS. The data for BHC and HHS does not make specific reference to social work in order to protect the anonymity of participants. The need for this has been detailed in the methodology chapter. A 'chain of evidence' (Yin 2003, p.105) has been maintained and specific quotes, linked to specific participants are coded and available to examiners, upon request. The extent to which tis marginalisation has diminished the power, and increased the marginalisation of social workers is detailed the 2004 paper by Murphy and McDonald entitled 'Power, status and marginalisation: Rural social workers and multi-disciplinary evidence-based practice' and published in the June 2004 Australian Journal of Social Work.

inform their own practice. The impact of marginalisation was felt most keenly within the remote location where there was limited access to support from discipline specific peers. For the isolated sole practitioner operating without peer support, the level of marginalisation was magnified and identified as being exacerbated by the development of the evidence-based movement.

These findings highlight the need for alternative practice models to be afforded a greater level of formal legitimacy within the evidence-based movement. The health sector defines EBP within the framework established by EBM and the NH&MRC hierarchy of evidence. While the work of Sackett et al. (1996) and, more recently, Haynes, Devereaux and Guyatt (2002) promotes the importance of clinical experience as an integral component of EBP, assumptions remain that evidentiary knowledge needs to be scientifically based to have validity. Study results across all sites show consistently that for disciplines such as social work—and, to a lesser extent, nursing and occupational therapy—these frameworks have limited relevance. While work is progressing through both the Cochrane and Campbell Collaborations to incorporate qualitative methodologies into formal evidence hierarchies, this has had minimal impact in the health sector, as evidenced by the data collected during the study and by a review of EBP-specific health literature.

The change process needed to respond to these issues is multi-faceted. Firstly, there needs to be a clear acknowledgment that the application of a uni-disciplinary, uni-dimensional mechanism such as EBP is not readily transferable to the complex multi-dimensional working environment of the multi-disciplinary team. This has been shown throughout the study results, with participants consistently identifying the lack of available evidence to meet the needs of the multi-disciplinary team. The consequence of this is the maintenance of discipline-specific approaches to practice and traditional role boundaries. Dopson et al. (2002) have documented that different disciplines place divergent values on evidence. This study extends Dopson's findings by showing this maintenance to be problematic in regard to marginalisation and divisiveness within the multi-disciplinary team. This study, and other literature (Swinkels et al. 2002) confirm there is very little evidence available specific to informing multi-disciplinary practice. BHC was one study site that had attempted to overcome this shortfall through investing significant resourcing to the development of a pathways system that provided a structured framework within discrete treatment areas for multi-disciplinary practice. This approach, however, was limited in that it applied a rigid framework for discipline practice and had limited transferability outside of the targeted treatment areas.

The consequence of a system in which a uni-disciplinary conceptualisation of EBP is applied to the multi-disciplinary context is that the notion of multi-disciplinary EBP remains elusive. Importantly, issues of divergent knowledge and contested understanding remain unresolved and potentially divisive within the multi-disciplinary team. As identified in recommendation three, there needs to be a formal acknowledgment of the limitations of existing evidence-bases when applied to the complexities of multi-disciplinary practice, and this is an argument that will be pursued by the researcher as part of the formal transfer of learnings to the Victorian Department of Human Services as the industry partner for this research. In addition, this information will be made available to the Commonwealth Department of Health and Ageing and the National Institute for Clinical Studies.

Recommendation 3

Government should explicitly acknowledge the incompatibility of current evidence-based frameworks for informing multi-disciplinary EBP, with a longer-term goal that specific strategies be developed aimed at enhancing multi-disciplinary evidence-based approaches to practice.

The second issue that arises from this component of the study findings is the need to increase the capacity for health disciplines to develop a greater understanding of diverse practice models and the philosophies underpinning them. An effective strategy to achieve this is through the provision of increased levels of interdisciplinary education in the health sector. The promotion of a strategy of inter-disciplinary education/professional development as a mechanism through which to enhance multi-disciplinary practice is not new (Beattie 1994; Gill & Lang 1995; Hinshaw 1995; Leathard 1994; Robb 1997; Roberts-DeGennaro 1996; Sternas et al. 1999; Tourse & Mooney 1999; Zwarenstein et al. 2001), but it remains legitimate, nonetheless. This is particularly true in a multi-disciplinary team environment in which practice is increasingly defined by EBP, and professional legitimacy is dependent on a capacity to validate treatment approaches.

This process can occur at the individual agency, the higher education/continuing professional development, and the policy level. It has been commenced, as part of this study, at the individual agency level, with a component of this research involving in servicing with multi-disciplinary practitioners at the QHS study site. This will be extended to both BHC and HHS on completion of the project. At the individual university level, the notion of multi-disciplinary EBP is to be incorporated into the curricula of this university (University of Ballarat) through the Bachelor of Arts (Rural Social Welfare) course in the 2005 academic year. While it is acknowledged that this is a discipline-specific course, and extension of this approach is limited by the scope of service

delivery offered at this university, it is the beginning of a process with the capacity for future extension. At the policy level, the importance of multi-disciplinary education will be promoted through the mechanisms of journal articles, conference proceedings, and negotiation with the Victorian Department of Human Services and other agencies with a brief to promote multi-disciplinary approaches to health delivery, including the Australian Rural Health Education Network, the Victorian Universities Rural Health Consortium and, outside Victoria, University Departments of Rural Health.

Recommendation 4

That interdisciplinary training be provided, particularly in regard to EBP, at the individual agency and university level to increase multi-disciplinary understandings of differences in practice models across diverse health discipline areas.

It is envisioned that this process would be complimentary to the training initiatives already in place for rural and remote practitioners through University Departments of Rural Health.

Finally, there needs to be a formal acknowledgment within the health sector that scientific evidence bases are not the only measure of effective practice. The work by the Cochrane Qualitative Methods Network should be built on and social work, in particular, needs to develop and formalise alternative measures through which practice decisions can be legitimised and be accepted as legitimate. This process has been commenced by the Australian Association of Social Workers and needs to be actively pursued, particularly in the health sector, to address issue of marginalisation identified through this study. This researcher has commenced the process of encouraging this approach through journal publication identifying the impact of marginalisation on social work practitioners in rural and remote health practice. This is a process that will be continued through the mechanism of the journal and conference proceeding.

Recommendation 5

That the importance of the development and legitimisation of qualitative evidence-based methodologies aimed at extending the current evidence frameworks for informing practice in the health sector be actively promoted at the government and peak agency level.

8.2.3 Practice Legitimisation: Myth or Reality?

EBP was identified across all study sites as providing the potential for practice legitimisation. The validity of scientific evidence was consistently seen to be a means through which to promote discipline practice and increase the capacity of practitioners to confidently adopt and endorse a specific approach to practice. In an environment in which medicine has historically retained sovereignty in decision-making at a variety of levels (Willis 1990), EBP was identified as a means for externally endorsed legitimisation of practice. This assessment of the potential of EBP to enhance professionalism and validate practice is extensively supported in contemporary literature on the benefits of EBP to the non-medical practitioner (Clemence 1998; Hendricks et al. 2000; McCarthy & Hegney 1998; Rosenwax, Semmens & Holman 2001; Turner 2001b). By placing this study within functioning multi-disciplinary teams, the rhetoric of EBP as a legitimising mechanism was tested against the reality of practice. An emergent finding of the study was that EBP did provide a mechanism for practice legitimisation; however, it was not sufficient, in itself, to ensure legitimisation and power in the decision-making process.

At the QHS site, EBP was consistently identified as providing an effective mechanism through which to validate practice and prove the value of one practice approach over another. There was a clear acknowledgment at this site that EBP could provide the basis for challenging medical decisions. While the success of this challenge was dependent on the view and flexibility of the medical leader, rather than solely on the evidence provided, EBP was viewed increasingly as a possible means through which to help shape decision-making. Practitioners at BHC identified that EBP had enhanced their capacity to validate practice through the inclusion of proven practice strategies into the pathways program. This was clearly articulated as having enhanced the legitimacy of practice across a variety of discipline areas at this site. At HHS, EBP did not provide a mechanism for practice legitimisation. It is in this finding, and in the echo of this finding at both QHS and BHC, that the myth within the reality of practice legitimisation is found. In the final analysis, the legitimisation of the practitioner remained dependent not on the legitimacy of the evidence but, as a consistent theme across teams, on the decision-making power of the medical specialist. Practice could be legitimised through EBP, but only if the medical specialist decided to accept the validity of a particular approach. While acceptance was highly probable at the QHS site, very possible at BHC, and entirely unlikely at HHS, it was, ultimately, the medical practitioner that determined the legitimacy attributed to one practice approach over another. EBP, therefore, while necessary for practice legitimisation, did not guarantee it. Study

findings showed clearly that it is a concept that remains dependent not on science but on the sovereignty of medicine.

8.2.4 Sovereignty Overruling Science

EBP is constructed upon the ideal of the pre-eminence of scientific evidence in shaping interventions. This fact is a constant in all the literature on EBP and is the underlying philosophy promoted by Archie Cochrane in his 1971 treatise. The current study has clearly demonstrated that, despite the centrality of science to the movement, decision-making was dependent on the wishes of the medical practitioner. In the final analysis, medical dominance led to a retained capacity for science to be overridden in the practice arena. These findings reinforce the work of Willis (1990) who identified the sovereignty of medicine and their dominance at the economic, political, social, and intellectual level of the health care system. Willis suggested that medicine is able to maintain control over other professionals in the health sector because it is not subject to the same levels and types of control as other health professions. In the current study, this theme was found to be a constant, with medical dominance found to supersede scientific evidence in shaping the practice of nurses, and allied health practitioners.

In the multi-disciplinary team context, across all three sites, traditional power hierarchies and role boundaries were found to be maintained, albeit to different levels—a trend found to be more strongly embedded in decision-making as degrees of rurality increased. At the HHS site, despite the fact that the nature of the rural workforce resulted in nurses playing a pivotal role in day-to-day treatment decision-making, the level of deference to the medical practitioner was found to be entrenched in practice philosophy. Treatment decisions by medicine were applied consistently, regardless of whether available evidence might promote an alternative approach as best practice. It could be argued that this situation was compounded by the fact that the nurse workforce at HHS was, in the main, an ageing, hospital-trained one that employed practitioners who received no grounding in EBP from initial formal training and who lacked access to professional development on EBP; however, this argument was not supported by the evidence. While it is acknowledged that the HHS nursing workforce did have limited preparation in alternative practice paradigms, it was clearly shown that, even when nurses were able to validate practice decisions with evidence, medical dominance was superordinate to the evidence—at times to the detriment of the patient.

The extent to which medical dominance determines the adoption of EBP is further consolidated by the evidence of the processes adopted by different teams operating within the same

organisation but managed by different medical leaders. In this instance, one team leader was a strong proponent of EBP and expected staff to actively and consistently validate practice with evidence. The other team leader did not promote EBP strongly, nor expect staff to validate practice decisions through evidence. Despite the fact that both teams operated within a practice environment with a strong evidence-based philosophy and an organisational agenda promoting uptake of EBP, data analysis showed that the direction of the team leader, over the organisational philosophy, determined the level of usage of EBP within each of the individual teams.

Therefore, a cross-site analysis of the data shows unequivocally that the view of the medical team leader remains one of the most influential factors in determining adoption and application of EBP by the multi-disciplinary team. This was found consistently across all study sites, although with some site-specific variation. At the QHS site, while medical leadership was identified as a determining factor of uptake of EBP by an individual team, the philosophy, culture, location and size of the organisation did ensure that decision-making was often evidence-based due to collegiate sharing and the availability of professional development and resourcing across all health service provision. At the BHC site, medical decision-making was also the major determinant of adoption of one particular practice approach over another. While the clinical pathways program had been established to ensure a consistent, evidence-based approach to practice, this program had not subverted the dominance of medicine in decision-making. Study participants acknowledged that pathway development had been modified in response to medical demands, regardless of the fact that the demands made did not conform to available evidence. Additionally, outside the pathways program, there was a consensus that medical decision-making rather than EBP was the driver in the adoption of one treatment approach over another. In the remote location of HHS, treatment decisions were consistently based on medical opinion, regardless of evidence, with practitioners identifying that decisions had often been made in contradiction of available evidence to meet the requirements of the medical decision-maker.

An additional and complex dimension to the power of medical dominance in subordinating evidence-based decision-making was found in relation to overseas-trained doctors working at the HHS site. Under federal government initiatives to attract more practitioners to rural and remote practice, a number of overseas-trained doctors have been employed. Study findings, comprising an interview with an overseas-trained doctor and feedback from six of the HHS staff highlight that power differentials existed between overseas-trained doctors and Australian-trained medical staff. Despite wishing to adopt an evidence-based approach to practice, medical staff from non-English-speaking backgrounds working in remote locations lacked the legitimate power afforded

to other health staff. This resulted in their having limited capacity to act as clinical leaders in promoting the adoption of EBP, or to argue against a treatment which did not meet best practice requirements. Given this current government agenda for recruitment of overseas-trained practitioners to rural and remote practice, this is an issue that must be recognised as having a potential impact on the adoption of EBP in these service settings.

In summary, while the importance of strong clinical leadership in promoting EBP has been consistently identified in the literature (Grol 1997; Thomson O'Brien et al. 2004; Walter, Nutley & Davies 2003a), and is a view supported by study participants and this researcher, this study shows overtly that medical leadership can both promote and support the introduction of EBP, or it can subjugate its adoption within the multi-disciplinary team. Further, the impact of medical dominance is a clear indicator of the limitations inherent in the perception of EBP adoption as—fundamentally—an issue of accessing professional development, peer support, and database evidence. These are constraints to uptake, and they will be discussed in detail later in this chapter; however, these findings signal that contrary to linear notions of uptake the resolution of resourcing and knowledge shortfalls is only one component of a complex system of influencers relating to EBP in the practice setting.

8.2.5 Organisational Context and Service Delivery Location

Organisational support was proven to be pivotal to uptake of EBP. This confirms previous study findings (Angus, Hodnett & O'Brien-Pallas 2003; Ashburner 2001; Atheron 2000; Dunning 2000; Ferlie et al. 2001; Gosling, Westbrooke & Coiera 2002) on the role of organisation, with cross-site analysis providing an excellent means through which to measure the impact of differential levels of organisational support on uptake of EBP. The QHS site was the largest and least remote site involved in the study. A strong organisational culture of promoting EBP was in place at this site, underpinned by adequate resourcing in regard to middle management, professional development, and collegiate/peer support. QHS was the most successful site in developing a broad-based, organisation-wide acceptance and adoption of the EBP philosophy. While the decision at the BHC site to focus support for EBP on a targeted pathways program was an excellent mechanism through which to maximise health outcome improvements in discrete treatment areas, it was a strategy that, at the time of data collection, had resulted in a limited organisation-wide acceptance and adoption of an evidence-based philosophy. This finding reinforces the importance of adopting multi-directional strategies, at the organisational level, to achieve broad-based organisational change around EBP (Dickey, Gemson & Carney 1999; Ferlie

et al. 2001; Grol 1997; Sheldon, Guyatt & Haines 1999; Walter, Nutley & Davies 2003a). The data from BHC also highlights the critical resource constraints faced by smaller and more isolated health organisations in attempting to implement EBP. The pathways program provided a middle ground: improving health outcomes while attempting to introduce an organisational change agenda around EBP.

The complete lack of any tangible organisational support for the uptake of EBP at HHS, and the subsequent low levels of uptake of the paradigm by HHS practitioners, provide a validation of the critical role of organisation in supporting uptake of EBP. The importance of middle management, the role of clinical leaders, the resourcing of portfolio responsibility for EBP, and the provision of targeted individual practitioner support in developing skills and knowledge around EBP have been shown, in their absence, to be an important part of facilitating the application of EBP in the rural practice setting.

These factors represent the consolidating findings from the study in relation to the role and importance of the health service organisation in promoting EBP. They clearly show the pivotal nature of organisational support in ensuring that EBP is adopted and add weight to existing knowledge pools around the need for organisational wide responses to the promotion of evidence-based practice. In regard to new emergent knowledge on organisational context and EBP, the study has identified a number of key issues specific to organisational size and location, and the interrelationship between organisation and community.

8.2.6 EBP and Institutional Dependence

This study has shown that the institutional setting and the legitimisation of professional authority provided by these settings are positively associated with adoption of EBP. Across all study sites, EBP was adopted and applied much more readily in the institutional setting, while its use was less evident in community settings, where there was greater patient input and greater levels of generic practice. The structure of the institutional setting and the formal frameworks around standards, accreditation, and service delivery management and accountability requirements all promoted a greater level of adherence to EBP.

The move into a less structured community setting removed many of these formal imperatives that play a role in regulating practitioner actions around EBP. Subsequent to this decreased regulation, the level of uptake of EBP was found to decrease. The increased autonomy over decision-making provided to the health practitioner in the community-based setting was also

found to influence decreasing levels of adoption of EBP. This autonomy was related not just to a decrease in formal regulatory structures but a decrease in accountability to colleagues and supervisors in relation to day-to-day practice. This finding was proven across all three study sites.

Study participants identified consistently that the increased level of patient input into decision-making that results from delivering a service in the community and in a patient's home also impacted on the extent to which practitioners adopted EBP. Consumer input in the community sector was found to result in a decrease in adoption of EBP. Participant acknowledgment that input and patient control over decision-making was often muted within the more formal organisational setting of the hospital reinforced the dependence of EBP on formal institutional structures.

The issue of evidence availability was also found to be influential in regard to institutional dependence for adoption of EBP. As noted previously, the bulk of the evidence that is available to inform practice is uni-dimensional and uni-disciplinary, and is often underpinned by an assumption that treatment will occur in a formalised setting. There is an acknowledged lack of evidence specific to community practice and primary care. This is an issue that has been discussed previously in the literature (Bryan-Brown & Dracup 2004; Charlton 1997; McColl et al. 1998a; Miles et al. 1999; Morris 1999; Slowther, Ford & Schofield 2004; Tanenbaum 1993; Tonelli 2001) and is one that remains unresolved. Practitioners across all three study sites identified that the lack of evidence applicable to community-based practice and primary care was influential in determining uptake of EBP, particularly in more remote locations, which is an issue to be discussed in detail later in this chapter.

The study findings illustrate the extent to which the combination of a lack of relevant and applicable evidence, practitioner autonomy, patient input, and community-based service delivery work to make EBP, in its current form, institutionally dependent. Again, this issue was found to be increasingly pertinent in more rural locations. As levels of remoteness increase, there is a parallel increase in the degree to which service delivery occurs outside the formalised institutional setting. This factor further diminishes the capacity of the rural and remote health organisation to adopt evidence-based approaches to practice as this is a service sector in which services are delivered, in the main, outside of the institutional setting.

This is a key issue that needs to be formally recognised by policy makers as shaping EBP in the rural context. Consequently, it is included as a recommendation to be taken to the Victorian

Department of Human Services and the Commonwealth Department of Health and Ageing when reporting the findings of this research study.

Recommendation 6

That the issue of the dependence of EBP on formal institutional structures, and the subsequent incompatibility of this requirement to the nature of remote practice, be formally brought to the attention of the Victorian Department of Human Services and the Commonwealth Department of Health and Ageing.

Recommendation 7

That the absence of evidence relevant to community practice and the impacts of this absence be brought to the attention of the Victorian Department of Human Services and the Commonwealth Department of Health and Ageing. This information sharing is aimed at ensuring that evidence availability shortfalls be formally recognised and addressed in departmental policy development on EBP and rural practice.

8.2.7 Community Authorising Practice

Another key emergent finding from this study—linked to the nature of community—has been the development of insights on the role of community in regard to EBP. The data from the HHS study site—and, to a lesser extent, BHC—has revealed that the local community can profoundly determine the uptake of EBP in small rural locales. The role and influence of community in rural locations has long been recognised as a key determinant of service development[2]; however, the influence of community on the uptake of a sector-specific innovation such as EBP has not been measured previously. In the health sector, research to date on uptake of EBP has focused at the health policy, health services, and individual health discipline level, and, with a few exceptions (Bastian 2000), the influence and voice of community has been largely overlooked. The data from HHS provides the basis for a realignment of this approach at the policy making level. Community ownership of the health services, the close personal interrelationships that exist between health practitioners and the community they service, and the parochialism that defines the remote service setting were found to be a major influence on uptake of EBP.

[2] The researcher has worked extensively with both the Victorian Department of Human Services and the Commonwealth Department of Health and Ageing and, with both departments, has been involved in extensive consultative processes with communities. This has been part of a commitment by government to enable the input of rural communities in service development in their local areas.

The strength of this influence is best illustrated through a comparison of the power of community when placed against the recognised power of medical dominance in the remote service setting. In a conservative community, and in a service sector in which medical dominance has been found to be a key determinant of practice decisions, the HHS data provided clear examples of the community using the political process to overturn decisions. These decisions, in the case example provided in the body of this thesis, were based on evidence and endorsed by the medical practitioners, but were rejected by a community resistant to change. In this instance, even medical decision-making had been subjugated to meet the demands of the rural community on how they perceived a service should be delivered.

Given the strength of this input in remote sectors, community must be considered an integral aspect of evidence-based practice decision-making. Consequently, it must also be incorporated into planning at the policy level to maximise the capacity for EBP to be responsive to the unique needs of these communities. Recommendations aimed at begin to address this issue from a policy perspective are outlined below.

Recommendation 8

The Consumer Health Forum of Australia should be provided with specific feedback on the findings of this study with the aim of working to develop a consumer participation strategy specific to EBP and remote practice.

Recommendation 9

That the need for consumer involvement in planning for rural and remote practice be promoted with the Victorian Department of Human Services, with the intent that consumer participation—with targeted representation from remote service areas—be incorporated as an integral part of government policy planning for rural health and EBP

This recommendation does not discount the input already provided to government by rural service users through mechanisms such as the Consumer Health Forum of Australia and the National Rural Health Alliance. The recent work by a consortium of associations to develop a 10-point plan for rural health service delivery (Rural Doctors Association of Australia et al. 2004) is testament to the presence of a strong grassroots based movement to support change. Rather the recommendation seeks to emphasise the importance of focusing specifically on remote practice and EBP.

Recommendation 10

That the critical role played by community in determining health service uptake of EBP be actively publicised through journal articles and the presentation of findings at relevant health conferences.

8.2.8 EBP: An Urban Construct

The final and perhaps most significant emergent result from this study has been the finding that EBP is essentially urbocentric. It is a paradigm developed in urban environments, monitored and reviewed by urban practitioners, and promoted by urban policy makers. As such, it remains incompatible with rural practice in a number of fundamental ways. Before moving into a discussion of the specific nature of this incompatibility, it is important to emphasise that incompatibility does not mean irrelevance. The provision of health services informed by evidence is as critical to rural practice as it is to urban practice. In acknowledgment of this, there has been a structured movement to promote localisation of guidelines as a mechanism through which to ensure that evidence development is responsive to the unique aspects of each location (McDonald 2003; NH&MRC 1998). In addition, the work of Taylor, Wilkinson & Blue (2001) has focused on the development of evidence-based models specific to rural and remote practice, and work is currently underway to promote the uptake of EBP by rural practitioners working in multi-disciplinary teams (Taylor, Campbell & Campbell 2003).

In a parallel process, there has been a strong and consistent promotion within the literature of the importance and value of localisation of evidence (Bero et al. 1998; Ferlie et al. 2001; Grol 1997; Howard & Jenson 1999; Lomas et al. 1991). When considered within this context, it would appear that both the mechanisms and the intent are in place to facilitate uptake of EBP by rural practitioners. It is argued, however, that the scope of the urbocentricity identified through this study cannot be negated simply by taking existing evidence and modifying it to meet the needs of rural locations.

This study has found that EBP, as it is currently structured, promoted, and resourced, is mismatched against the constraints placed on multi-disciplinary practitioners working in rural and remote sectors. This is an issue that has been discussed by previous writers (Blue et al. 2003; Gosling, Westbrook & Coiera 2003; Taylor et al. 2002); however, by locating this study within multi-disciplinary teams across degrees of rurality, the specific nature and dimensions of EBP as

an urban construct were able to be understood. The notion of urbocentricity was expressed in a number of ways at the different levels of remoteness, as detailed below.

The lack of transferability of evidence

Data from the BHC and HHS sites highlight that using available evidence developed in metropolitan locations to meet the needs of rural communities is likely to be problematic. This is not because the evidence itself lacks validity but, rather, because of resourcing issues encountered at rural and remote locations. These resourcing issues impact at two levels. In the first instance, the requirements inherent to the evidence itself negate the capacity for the evidence to be transferred to the local context. Evidence-based treatment options that require access to specific equipment, to transportation within set timeframes, or to specialist supports are often not viable in the rural and remote service location. Data from both BHC and HHS provided numerous examples of instances where EBP was not able to be adopted or adapted because of incompatibility between what the evidence outlined and the resource limitations (equipment, staffing, and those created by isolation) faced by the health site.

The second resourcing constraint relates to the process of localisation of evidence. In instances where localisation is pursued as an option, it must be acknowledged that this process is extremely resource intensive. Data from BHC illustrates the capacity for this process to be undertaken but also highlights the level of resourcing required to make localisation a viable option. The nature of rural practice and the associated resource constraints mean that rural health organisations need to make a choice between targeting and funding a specific treatment area for guideline localisation and the resourcing of other EBP strategies such as in-servicing, professional development, and technological infrastructure. This is not, generally, a choice that has to be made in urban locations where practitioners have a greater capacity to independently access professional development, collegiate input, peer support, and in-servicing opportunities from across a metropolitan service system.

Generalist nature of practice

As identified by Katekar (2003), the rural location does not have the infrastructure needed to support specialist services. This means that the rural practitioner is a generalist, required to develop skills across a wide range of treatment conditions. The capacity to access evidence to support this extended scope of practice is constrained by a number of factors. The time required to access evidence across a broad range of treatment areas was identified as placing EBP, as it is

currently structured, beyond the workplace capacity of the rural practitioner. This was initially identified as having a minor impact at QHS but was found to have increasing levels of impact, across BHC and HHS.

The study found that the quality and applicability of available evidence lacks the flexibility to respond to the needs of the generalist rural practitioner. This was a consistent assessment across all three study sites, although the motivation for this assessment varied across sites. At QHS, the only sub-acute site involved in the study, the uni-dimensional nature of EBP was assessed as being inadequate to meet the multi-dimensional treatment needs of the patient group provided with services at the site. This is a factor that has been discussed previously in this chapter but is reiterated here because QHS practitioners identified it as an issue relating to generalist remote practice. QHS practitioners often work with patients who need to return to rural and remote settings where, it was recognised, particular treatment regimes could not be maintained. The quality of available evidence does not accommodate the practitioner working in a regional city who needs to provide a rehabilitative service to a patient living in a remote location. At both BHC and HHS, quality and applicability were linked very clearly to the failure of available evidence to respond to the unique needs and contexts of the rural and remote environment. In addition to the issue of the adequacy of uni-dimensional evidence in meeting diverse patient needs, the lack of specialist services (both practitioner and equipment-based), geographic isolation, and the generalist approach intrinsic to rural practice were all identified as negating the value of currently available evidence bases.

Lack of access

The lack of application skills, and the difficulties encountered by rural practitioners in addressing these skill shortfalls, was assessed as a major obstacle to independent uptake of EBP at the BHC and HHS sites. These data reinforce that rural and remote practitioners face unique barriers in accessing professional development and peer/collegiate/specialist support to enhance EBP adoption. QHS, as the least remote of the study sites, encountered the lowest level of difficulty in developing the skills needed to use EBP. This is evidenced both in the interview data presented in chapter 5, and in a comparison of statistical data that show that while 60% of QHS practitioners rated their skill level in using EBP as ‘high’, at HHS, the most remote study site, this figure fell to 16%.

Lack of organisational infrastructure support

The lack of organisational infrastructure support already discussed also illustrates the urbocentricity of EBP. Adequate organisational support is pivotal to effective uptake of EBP and, as identified in chapter 2, organisation-wide strategies are increasingly promoted as a key implementation intervention. It is not uncommon however for small rural organisations to have limited capacity to resource an organisational change agenda. While small organisational infrastructure is not limited to remote practice, it is compounded in rural locations for a number of reasons. The inability to readily access interagency support, the major recruitment and retention issues faced by rural regions and the resourcing constraints inherent to rural organisations all impact on the applicability and adoption of EBP in rural practice. The lack of organisational infrastructure support was exacerbated by the service fragmentation that has become an intrinsic part of health service delivery in many rural locations. All three study sites were either a component part of a larger health service (QHS), were the main site of dual-site health organisation (BHC), or were a health service that comprised a number of small sites (HHS). While health service fragmentation is not considered problematic in implementing an organisation-wide strategy for adoption of EBP at the QHS site (where there is limited geographic or resourcing disadvantage), it was found to be a major inhibitor to uptake of EBP at the more remote locations of BHC and HHS. The resourcing constraints, the geographic isolation between sites, the parochialism of diverse rural communities, and the levels of health service ownership associated with this parochialism, were found to be instrumental in limiting the universal adoption of EBP across the rural health service organisation.

Recommendation 11

That the Victorian Department of Human Services be informed of the findings of this research and be lobbied to provide a commitment to undertake research in rural locations specific to the needs of the rural and remote health practitioner and health service organisation

Recommendation 12

That the Commonwealth Department of Health and Ageing, through their state Departments of Rural Health, adopt an agenda to work with regional communities to facilitate the development of evidence specific to the rural, multi-disciplinary practice setting.

Recommendation 13

That the findings of this study be presented to the National Rural Health Alliance with the intent that a national policy statement be developed recognising the need to review current policy on evidence-based practice as it relates to the rural and remote context.

Recommendation 14

That professional development education strategies be developed, specific to the needs of remote practitioners, and be funded to be delivered, as requested, at specific rural and remote locations.

It is acknowledged that some significant inroads have been made in the provision of professional development activities specific to meeting the needs of rural and remote health practitioners. The establishment of the Clinicians' Health Channel and the work of the Rural Health Education Foundation in providing satellite interactive Continuing Medical Education and Continuing Professional Development are landmark advances. The data from HHS however clearly show the infrastructure and staffing limitations of remote practice. These limitations have, to a large extent, negated the capacity of practitioners to use many available professional development options and highlight the importance of an increase in the provision of on-site professional development opportunities around EBP.

In summary, this study has identified a number of key findings and put forward a series of recommendations aimed at enhancing understanding of EBP in the rural and remote service sector. While findings have been insightful, it is important to acknowledge the identified limitations of the study. While methodological shortfalls to this study have been outlined in detail in Chapter Four, there are shortfalls relating to outcome attainment and the scope of the study that must be considered.

A significant limitation of the data collection process relates to the lack of service user input into this study. Given the identified role of the consumer in determining uptake of EBP, the failure to provide a mechanism for this group to voice their perceptions of EBP must be viewed as a shortfall of the study and an area for research into the future.

Additionally, this study sought, from the outset, to provide new knowledge on EBP and rural practice and to operationalise any recommendations that emerged as a result of the study. Some work has already been undertaken in relation to the publication of journal articles and presentation at conferences, as has some site-specific in servicing at the individual agency level.

However, the majority of the recommendations that have been made are dependent on the completion of the study before they can be initialised. This means that it has not been possible to instigate change in any notable way at this point in time. This is considered an operational limitation and it is the intention of the researcher that the recommendations outlined throughout this chapter will be rigorously pursued as part of the commitment to the industry partner and the sites involved in the study.

Further research is also needed to clearly articulate the type of evidence-based research appropriate to meet the needs of rural and remote locations. These areas for the development of future research are outlined in the following recommendations:

Recommendation 15

That further research be undertaken, with a specific focus on multi-disciplinary practice, which identifies the priority areas for research funding across diverse rural environments.

This recommendations is made in acknowledgment that research needs differ dependent on the nature of the rural practice environment and the specific health, geographic and resourcing issues faced at different locations. Exploring and mapping the type of research needed in diverse locations will ensure that the targeting of research dollars is informed by the diversity of rural and remote practice.

Recommendation 16

That future research be undertaken which allows rural consumers, across varying degrees of rurality, to have input into understanding the role and importance of EBP to service delivery, across diverse service delivery environments.

This recommendation seeks to address the shortfall of the current research which has reached conclusions about service users and EBP that are derived solely from the worldview of the service provider. It is an area that needs to be considered a priority for research into the future.

These recommendations will be promoted with the University of Ballarat, Office of Research and Graduate Studies as areas targeted for development into the future, as part of the university commitment to meeting the needs of rural and remote communities.

8.2.9 EBP and this study: A concluding comment

This study aimed to:

> Examine EBP across the domains of rurality, and multi-disciplinary teamwork to address the current paucity of knowledge in these areas and to examine EBP from the perspective of the multi-disciplinary team, individual members of that team and service management, across varying degrees of rurality.

This aim has been achieved, with a clear finding that the uptake of EBP in rural and remote areas is, and will continue to be, an elusive notion. The study has also shown however that, unlike many previous studies which identified knowledge levels, access to resources and professional development as the reasons for low levels of uptake, the elusiveness of EBP in rural and remote multi-disciplinary practice is not for the reasons that have been assumed. Urbocentricity, medical dominance, community power and control and the uni-disciplinary nature of EBP play a far greater role in determining the applicability of this paradigm to rural practice that the practicalities of learning the what and how of finding and applying evidence. It is through these insights that evidence-based practice, and how it pertains to rural and remote practice, can be redefined into the future.

Appendices

APPENDIX A PARTICIPANT QUESTIONNAIRE

1 Please identify your health discipline by placing a tick in one of the boxes below:

❑General Practitioner	❑Consultant Physician	❑Social Worker
❑Psychologist	❑Physiotherapist	❑Occupational Therapist
❑Nurse	❑Dietician	❑Speech Pathologist
❑Podiatrist	❑Prosthetist	❑Orthotist

❑Other_____

2. Length of Time Practicing: _____ years

3. Postcode:

4. Please indicate your opinion as to the truth of each of the following statements:

	True	False	Don't know
a. Evidence-based practice promotes research evidence as the key element to be considered when making practice decisions.	❑	❑	❑
b. Evidence-based practice is about ensuring that practitioners have ongoing access to current validated research findings.	❑	❑	❑
c. Adopting an evidence-based practice approach requires a practitioner to reject all practice approaches not supported by validated research evidence.	❑	❑	❑
d. Evidence-based practice is a combination of research evidence, professional expertise and knowledge and service user input.	❑	❑	❑
e. Evidence-based practice is underpinned by appraised and validated research which is disseminated to practitioners through a variety of mechanisms including professional journals, professional in-servicing and computer /internet based resources.	❑	❑	❑
f. Evidence-based practice is the only way to be certain that treatment options chosen by practitioners achieve best practice standards.	❑	❑	❑
g. In order to successfully apply evidence-based approaches to service delivery, practitioners need to review all current practice against established evidence-based criteria.	❑	❑	❑
h. Effective evidence-based practice is dependent on the existence of clinical practice guidelines.	❑	❑	❑
i. Randomised control trials and systematic reviews are considered the 'gold standard' of evidence in the evidence-based practice movement.	❑	❑	❑

5. Please list as many as you can of the different evidence types used to inform evidence-based practice (for eg Systematic reviews, case studies):

_____

_____

6. By placing a tick in the appropriate box, please rate:

	Negligible	Basic	Moderate	Good	Excellent
Your understanding of the concept of evidence-based practice.	❑	❑	❑	❑	❑
Your knowledge of the availability of research evidence relevant to **your** health discipline.	❑	❑	❑	❑	❑
Your knowledge of the availability of research evidence relevant to **other** health disciplines	❑	❑	❑	❑	❑

7. Please rate your level of skill in each of the following areas:

	Negligible	Basic	Moderate	Good	Excellent
a. Using computer & internet resources to access evidence	❑	❑	❑	❑	❑
b. Framing an evidence-based research question	❑	❑	❑	❑	❑
c. Interpreting research findings	❑	❑	❑	❑	❑
d. Evaluating the value/relevance of different evidence types to your practice situation	❑	❑	❑	❑	❑
e. Assessing the validity & authenticity of presented evidence	❑	❑	❑	❑	❑
f. Assessing the value/relevance of presented evidence against professional practice standards	❑	❑	❑	❑	❑
g. Regularly reviewing your own practice	❑	❑	❑	❑	❑
h. Identifying gaps in your professional practice	❑	❑	❑	❑	❑
i. Reviewing your practice against current research findings	❑	❑	❑	❑	❑
j. Transferring research findings to the practice context	❑	❑	❑	❑	❑

8. Please tick the box that best reflects your view of each of the following statements:

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
a. I believe that evidence-based movement is highly relevant to my health discipline	❑	❑	❑	❑	❑
b. As a general rule, practice wisdom outweighs evidence as the basis for practice decisions	❑	❑	❑	❑	❑
c. Evidence-based practice is relevant to my day to day practice	❑	❑	❑	❑	❑
d. Evidence-based practice equates to	❑	❑	❑	❑	❑

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
'cookbook practice'.					
e. Evidence-based practice is fundamental to all professional practice.	❑	❑	❑	❑	❑
f. Evidence-based practice is more relevant to disciplines with a strong research tradition.	❑	❑	❑	❑	❑
g. Evidence-based practice is useful but is not critical to effective practice.	❑	❑	❑	❑	❑
h. Evidence-based practice is an effective means by which to decrease practice errors and increase practitioner knowledge.	❑	❑	❑	❑	❑
i. Evidence-based practice provides an effective mechanism to achieve better health outcomes.	❑	❑	❑	❑	❑
j. I am too busy in my practice to introduce evidence-based practice.	❑	❑	❑	❑	❑
k. Effective evidence-based approaches are dependent on the existence of clinical practice guidelines.	❑	❑	❑	❑	❑
l. Existing clinical guidelines are not responsive to the needs of my health discipline.	❑	❑	❑	❑	❑
m. The evidence base available to support my discipline area is plentiful and of a high quality.	❑	❑	❑	❑	❑
n. Evidence-based practice is important enough to allocate time to training and skills development.	❑	❑	❑	❑	❑
o. Professional judgement and the needs of the client invariably override insights provided by evidence bases.	❑	❑	❑	❑	❑

9. Please indicate the extent to which you access evidence to inform your practice:

❑daily ❑weekly ❑monthly ❑quarterly
❑yearly ❑very infrequently ❑never

10. Have you ever used clinical practice guidelines?

❑Yes ❑No ❑Uncertain

11. Have you ever been involved in the development of clinical practice guidelines?

❑Yes ❑No

12. Please rank, from most often to least often (with 1 representing those 'most often' used), as many as possible of the mechanisms you **use to inform** your **practice decisions:**

❑Randomised Control Trials ❑Systematic reviews of clinical trials

❑Journal articles ❑Initial formal training

❑Professional development ❑Colleagues from own discipline

❑Colleagues from other disciplines ❑Own practice experience

❑Input from patients

❑Other types of research evidence/ other mechanisms used to inform practice (please specify)

_____

_____

13. In the past 6 months I have:

❑Reviewed research evidence to improve existing knowledge base

❑Accessed research evidence to inform a practice decision

❑Undertaken professional development to learn more about evidence-based practice

❑Used clinical practice guidelines to inform a practice decision

❑Investigated other mechanisms to help improve the quality of your practice decisions (please provide details of these):

_____

_____

14. As indicated in your response to Question 9, to the extent that <u>you use</u> an evidence-based approach, please outline why <u>you do use evidence</u> to inform practice:

_____

_____

15. As indicated in your response to Question 9, to the extent that <u>you do not</u> use an evidence-based approach, please outline <u>why you do not use evidence</u> to inform practice:

_____

_____

Thank you for your time in completing this questionnaire.

Should you as a participant have any concerns about the conduct of this research project, please contact the Executive Officer, Human Research Ethics Committee, Office of Research, University of Ballarat, PO Box 663, Mt Helen, VIC 3353. Telephone: (03) 5327 9765.

APPENDIX B: DOCUMENTATION ACCESSED

BASE HEALTH CARE

- Annual Report 2000/2001 Base Health Care
- Staffing and organisational profile information
- Clinical Risk Management Program Documentation
- Journal articles written for Medical Journal of Australia (2001) and Emergency Medicine Journal (2002) on the clinical pathways program
- Strategic planning information on clinical pathways
- Clinical Pathways Program Documentation

HOPWARRAH HEALTH SERVICE

- Annual Report 2000/2001 Hopwarrah Health Service
- Strategic Planning Documentation
- Newsletters for community on health service developments
- Staffing and organisational profile information
- Restructure review documentation

QUEENS HEALTH SERVICE

- Annual Report 2000/2001 Queens Health Service
- Staffing and organisational profile information
- Innovation and best practice strategic program documentation
- Journal articles/ quality improvement conference reports
- Key performance indicator documentation 2001
- Accountability element reports
- Training and development calendar
- Inpatient Rehabilitation Program documentation
- Rehabilitation in the Home Program documentation

APPENDIX C: GROUP INTERVIEW SCHEDULES

Introductory discussion

Ask participants to outline the focus of the work undertaken by their multidisciplinary team and their roles within it.

Knowledge and Uptake

- What do you define as evidence-based practice within the multidisciplinary context?
- To what extent are evidence-based approaches used to inform practice within this multi-disciplinary team? What are the reasons for this? (May need to go around the room discipline by discipline)
- Do you believe that an evidence based approach to practice is relevant in the multidisciplinary
- Context? In what ways?
- What are the factors which influence/inform decisions to use or not use evidence-based
- practice within this multidisciplinary team?
- Does the rural context have an impact on the uptake of multidisciplinary EBP?
- Evidence-based practice has evolved from a positivist scientifically based research tradition. Do you believe this fact influences the uptake of evidence-based approaches within your multi-disciplinary team?
- The uptake of evidence based practice promoted (resisted) more by some disciplines than by others within the context of this multi-disciplinary team? If so, which disciplines and why?
- In what ways is the uptake of evidence-based practice promoted (resisted) within this multidisciplinary team?
- What are the key factors that drive and control the ways in which evidence based practice is implemented within this multi-disciplinary team?
- Do you believe that the move from a formalised hospital setting to a community based setting impacts on the uptake of evidence based practice? In what ways?
- Do you believe that the development/lack of development/ lack of access to discipline specific customised and localised clinical practice guidelines impacts on the uptake of evidence based practice? To what extent? In what ways?
- Do you believe that the development/lack of development/ lack of access to multidisciplinary customised and localised clinical practice guidelines impacts on the uptake of evidence based practice? To what extent? In what ways?

Management Structure Focus

- Does the management team of this health service consider evidence-based approaches to be central to service delivery and why?
- Do you believe that the level of organisational support of EBP impacts on the uptake of EBP in this multidisciplinary team?
- To what extent, and in what ways, does structure for clinical and administrative management within the rural health service impact on the uptake of multidisciplinary EBP?
- To what extend does organisational culture within the health service impact on the uptake of multidisciplinary EBP?
- Does the size of the rural health service impact on the uptake of multidisciplinary EBP?
- What is the level of access to research knowledge within this health service and do access levels impact on the uptake of multidisciplinary EBP by this team?
- Identification of the level of isolation and fragmentation within the rural health service and discussion on how isolation and fragmentation impact on the uptake of multidisciplinary EBP

APPENDIX D: INDIVIDUAL INTERVIEW SCHEDULE

Introductory discussion

Ask participants to outline their discipline type, professional training (including training relating to evidence-based practice) and work experience.

Knowledge and Uptake

- What do you define as evidence-based practice?
- What type of evidence do you use to inform your practice?
- Would you consider your discipline to be a scientifically based one? Why or Why not?
- Do you believe that discipline backgrounds have an impact on the extent to which evidence is used to inform practice?
  Prompts:
  - *In what ways?*
  - *For what reasons?*
- What do you believe to be some of the key factors influencing levels of knowledge and adoption?
- To what extent do you think each of these factors has an influence:
- The focus of professional training
- The professional philosophy of a discipline
- Historical frameworks that define a discipline
- The availability or focus of ongoing staff development
- Any other factors?
- To what extent is the use of scientific evidence relevant to practice in your discipline area*?*
- Do you believe that evidence based practice is relevant in the multi-disciplinary context? Why? Why not?
- Do you believe that research to inform practice is dependent on the existence of clinical practice guidelines - Why? Why not?
- Have you had any involvement in developing local practice guidelines?
- Do you believe that evidence based practice is relevant and appropriate to your work in a rural setting? In what ways?
- Do you believe that the rural context has any impact on using an evidence based approach to practice? In what ways?
- What are the key factors likely to influence your decision to use evidence to inform your practice?

Factors impacting on uptake

- In your multidisciplinary team(s) which disciplines take a lead role in decision-making in relation to treatment approaches?
- Do you believe that the views of the team leader has an impact on the levels of uptake of evidence based practice? If so, in what ways?
- In the multi-disciplinary context, do you believe that particular disciplines promote evidence based practice more than others? Why?
- In the multi-disciplinary context, do you believe that particular disciplines resist evidence based practice more than others? Why?

Context Issues

- Could you please outline your perceptions as to the extent to which a move from a formalised hospital setting to a community based setting impacts on the use of evidence based approaches. In what ways? Why?

Prompts:

- *Consider the move within the context of:*
  - *the level of medical control over service delivery approaches,*
  - *levels of discipline autonomy in treatment decisions and*
  - *on the uptake of evidence based practice*

- Do you believe that the development/lack of development of discipline specific customised and localised clinical practice guidelines impacts on the uptake of evidence-based practice?
  Prompt:
  - *In what way?*

Organisational Issues

- Does the management team of your rural health service support an evidence-based approach to service delivery.
  Prompt:
  - *How and Why?*
- Do you believe that the level of organisational support for EBP impacts on the uptake of EBP by the multidisciplinary team in your health service?
  Prompt:
  - *In what way?*
- Do you, as a health practitioner, believe that management within your health service works to promote/limit the uptake of EBP by your multidisciplinary team?
  Prompt:
  - *In what way?*
- Do you believe that the structure for clinical and administrative management within your health service impact on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- Do you believe that the organisational structures of this health service facilitate or limit the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- Do you believe that the organisational culture within this health service impacts on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- Does the size of your health service impact on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- Do you feel that the level of access to research knowledge within your health service impacts on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*

These questions are specific to BHC and HHS

- Do you believe that the isolation of your health service from larger service centres impacts on the uptake of multidisciplinary EBP?
  Prompt:
  -In what way?
- Do you believe that the fragmentation of your health service into a number of smaller service
  delivery sites impacts on the uptake of multidisciplinary EBP?
  Prompt:
  -In what way?

Individual Interviews - Management Team.

Ask participants to outline their role, professional training (including training relating to evidence-based practice) and work experience.

Knowledge and Uptake

- What are the key quality assurance processes in place within this health service for ensuring improved health outcomes?
- What place does research have in relation to quality assurance mechanisms?
- What is your understanding of the term 'evidence-based practice'?
- Do you use evidence to inform your practice at the management level?

Organisational Issues

- Do you, as part of the administrative management structure of your health service, support the
  adoption of an evidence-based approach to service delivery.
  Prompt
  - *How and Why?*
- Do you believe that the level of organisational support for EBP impacts on the uptake of EBP by the multidisciplinary team in your health service?
  Prompt:
  - *In what way?*
- Do you, as a member of an administrative management team, believe that your management processes work to promote/limit the uptake of EBP by health practitioners working in your service?
  Prompt:
  - *In what way?*
- Do you believe that the structure for clinical and administrative management within your health service impact on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- Do you believe that the organisational structures of this health service facilitate or limit the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- What would you define as the organisational culture within this organisation?
- Do you believe that the organisational culture within this health service impacts on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- Does the size of your health service impact on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- What processes are put in place at the management level to ensure that practitioners have access to research/evidence?
- Do you feel that the level of access to research knowledge within your health service impacts on the uptake of multidisciplinary EBP?
  Prompt:
  - *In what way?*
- Does the rural context have an impact on management capacity to promote and evidence based approach to practice?

These questions are specific to BHC and HHS

- Do you believe that the isolation of your health service from larger service centres impacts on the uptake of multidisciplinary EBP?

  Prompt:

  - *In what way?*

- Do you believe that the fragmentation of your health service into a number of smaller service delivery sites impacts on the uptake of multidisciplinary EBP?

  Prompt:

  - *In what way*

APPENDIX E ETHICS LETTERS OF APPROVAL

Please note that these letters of approval have been de-identified to ensure maintenance of participant anonymity

APPENDIX F: TRANSCRIBER DECLARATION

UNIVERSITY OF BALLARAT

Researcher:

Angela Murphy

Research Project Title:

An investigation of Multidisciplinary Evidence Based Practice in Rural and Remote Service Provision

Transcriber (fill out below)

I . . . . . of . . . . . .
. . . . . .

acknowledge that all information transcribed by me for the research program named above must and will be treated by me with the strictest confidence.

Further, I will ensure that all tapes while in my possession will be treated with the same level of confidentiality as the transcribed material and, together with the data, will be stored separately and securely, as stated in the research project application.

All material relating to the above project will, while in my possession, be accessible to the researcher(s) only.

Signature: _____

Date: _____

APPENDIX G INFORMED CONSENT DOCUMENTATION

Plain Language Statement provided to postal questionnaire participants

Introduction

My name is Angela Murphy and I am currently undertaking research toward a PhD with the School of Behavioural and Social Sciences and Humanities at the University of Ballarat. My research study is aimed at investigating evidence-based practice in rural and remote areas. Research supervision for this project will be provided by Dr John McDonald from the Institute for Rural and Regional Research at the University of Ballarat.

Study Aim

The aim of the study is to investigate the applicability of multidisciplinary evidence based evidence to rural and remote practice. A postal questionnaire has been developed for distribution to health practitioners working in the Grampians Region of Victoria. The health disciplines to which the questionnaire is being distributed include General Practitioners, Consultant Physicians, Nurses, Physiotherapists, Occupational Therapists, Dieticians, Psychologists, Podiatrists, Prosthetists, Orthotists, Speech Pathologists, and Social Workers.

A central objective of the study is:

To investigate different levels of knowledge, understanding and uptake of evidence based practice within and between health disciplines providing rural health services.

Confidentiality

The data collected through the postal questionnaire does not contain any identifying information. Aggregated results will be used for research purposes and it will not be possible to identify anything beyond the discipline of the participant.

What are you being asked to do?

I would like to be able to include you as a participant in this study. I have gained ethical approval for this study from the Ethics Committee at the University of Ballarat. If you are interested in being involved in this study then please complete the postal questionnaire and return it to me in the envelope supplied as soon as possible. If you are interested in finding out more about the research study, either before making a decision about involvement or after you have completed the questionnaire, then I am very happy to meet with you at your convenience.

I am available by phone or email on weekdays. I have also included the contact details of my PhD supervisor. If you would like to speak to him about any issues of concern or to clarify points of interest, please contact him at your convenience.

Thankyou

Angela Murphy

Contact Details

Angela Murphy
PhD candidate
University of Ballarat
PO Box 663 Ballarat, 3353
Phone 53 279 197
aa.murphy@ballarat.edu.au

Dr John McDonald
Principal Supervisor
University of Ballarat
PO Box 663 Ballarat 3353
Phone 53 279 129
j.mcdonald@ballarat.edu.au

This is the Plain Language Statement provided to participants involved in group and individual interviews

Introduction
My name is Angela Murphy and I am currently undertaking research toward a PhD with the School of Behavioural and Social Sciences and Humanities at the University of Ballarat. My research study is aimed at investigating evidence-based practice in rural and remote areas. Research supervision for this project will be provided by Dr John McDonald from the Institute for Rural and Regional Research at the University of Ballarat.

Study Aim
The aim of the study is to investigate the applicability of multidisciplinary evidence based practice to rural and remote practice. In order to achieve this aim, input is sought from health practitioners on a variety of issues relating to evidence based practice.
Key objectives of this study are:

- **To investigate the extent to which inter and intra disciplinary practice bases affect the uptake of evidence based practice.**

- **To investigate the impact of the organisational behaviour and structure of health services on the uptake of rural multidisciplinary evidence based practice.**

These objectives will be investigated through a series of group and individual interviews that will be undertaken at your health service. The input that you would be able to provide through your involvement in the interview process would be invaluable in helping me to gain a much better understanding of evidence based practice and its applicability to your work.

Proposed Methods
It is intended that a series of group and individual interviews be conducted at your health service. All interviews will be tape recorded and transcribed at a later date. The three attachments (Appendix A, B, C) provided at the back of this document outline the proposed interview questions. It is likely that each interview will take one hour and that interviews will be conducted 3 times over a 12 month period.

Confidentiality
The information collected during interview will not contain any information that could identify you as an individual participant. Transcripts of interviews will be completed by removing any identifying information. At no time will any data identifying individuals be included in the results. If you are concerned about the issue of confidentiality during group interview, please be assured that a process to maintain confidentiality during, and after, the group interview has been established. I would be happy to discuss this with you if you have any concerns. It is also a requirement of involvement in the group interview process that confidentiality of participants be maintained.

What are you being asked to do?
I would like to gain your permission to include you as a participant in this study. I have approached your health service and they have agreed that your organisation is to be involved in the study. I have also gained ethical approval from the ethics committee at your health service. If you indicate that you are interested in being involved in this study (on the attached consent form) then I will make contact in the next few days to organise a time to suit you and other members of your team. If you

are interested in finding out more about the research study before making a decision about involvement, I am very happy to meet with you at your convenience.

I am available by phone or email or will make contact with you once I receive the attached consent form by return mail (a stamped and addressed envelope has been included with this information package).

I have also included the contact details for my PhD supervisor if you would like to speak to him about any issues of concern or to clarify any points of interest.

Thankyou

Angela Murphy

Contact Details

Angela Murphy
PhD candidate
University of Ballarat
PO Box 663 Ballarat, 3353
Phone 53 279 197
aa.murphy@ballarat.edu.au

Dr John McDonald,
Principal Supervisor
University of Ballarat
PO Box 663 Ballarat 3353
Phone 53 279 129
j.mcdonald@ballarat.edu.au

Should you (i.e. the participant) have any concerns about the conduct of this research project, please contact the Executive Officer, Human Research Ethics Committee, Office of Research, University of Ballarat, PO Box 663, Mt Helen VIC 3353. Telephone: (03) 5327 9765.

Participant Involvement Form for the Research Project:

(Distributed to participants prior to the commencement of data collection)

An Investigation of Multidisciplinary Evidence Based Practice in Rural and Remote Health Service Provision

Name: _____

Hospital/Health Service _____

Phone Number _____

Email address _____

Please Tick the following statements, as appropriate✓

❑ I would like the researcher to make contact with me so that I am able to find out more about this study

❑ I am interested in being involved as a participant in this study

Thankyou for completing this form. Please return in the enclosed envelope or email the above information to aa.murphy@ballarat.edu.au or ring me on telephone: 53 279 197.

Participant Informed Consent Form for the Research Project:

An Investigation of Multidisciplinary Evidence Based Practice in Rural and Remote Health Service Provision

Consent (fill out below)

I. . . . . of . . . . . .
. . . . . .

hereby consent to participate as a subject in the above research study.

The research program in which I am being asked to participate has been explained fully to me, verbally and in writing, and any matters on which I have sought information have been answered to my satisfaction.

I understand that:

- all information I provide (including questionnaires) will be treated with the strictest confidence and data will be stored separately from any listing that includes my name and address
- aggregated results will be used for research purposes and may be reported in scientific and academic journals
- Interviews will be tape recorded for transcription at a later date. All information identifying individual participants will be removed during transcription. Tapes and transcripts will be stored separately in a secure location and staff employed to type transcripts will be briefed on the need for confidentiality and will sign a transcriber confidentiality statement prior to employment.
- I am free to withdraw my consent at any time during the study in which event my participation in the research study will immediately cease and any information obtained from it will not be used.

SIGNATURE: . . . . . **DATE**: . . . . . .

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